

**Fishery Data Series No. 08-14**

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# **Salmon Age and Sex Composition and Mean Lengths for the Yukon River Area, 2006**

**by**

**James Bales**

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**April 2008**

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**Alaska Department of Fish and Game**

**Divisions of Sport Fish and Commercial Fisheries**



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Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative		fork length	FL
deciliter	dL	Code	AAC	mid-eye-to-fork	MEF
gram	g	all commonly accepted		mid-eye-to-tail-fork	METF
hectare	ha	abbreviations	e.g., Mr., Mrs., AM, PM, etc.	standard length	SL
kilogram	kg			total length	TL
kilometer	km	all commonly accepted			
liter	L	professional titles	e.g., Dr., Ph.D., R.N., etc.	<b>Mathematics, statistics</b>	
meter	m			<i>all standard mathematical</i>	
milliliter	mL	at	@	<i>signs, symbols and</i>	
millimeter	mm	compass directions:		<i>abbreviations</i>	
		east	E	alternate hypothesis	H <sub>A</sub>
		north	N	base of natural logarithm	<i>e</i>
		south	S	catch per unit effort	CPUE
		west	W	coefficient of variation	CV
		copyright	©	common test statistics	(F, t, $\chi^2$ , etc.)
		corporate suffixes:		confidence interval	CI
		Company	Co.	correlation coefficient	
		Corporation	Corp.	(multiple)	R
		Incorporated	Inc.	correlation coefficient	
		Limited	Ltd.	(simple)	r
		District of Columbia	D.C.	covariance	cov
		et alii (and others)	et al.	degree (angular )	°
		et cetera (and so forth)	etc.	degrees of freedom	df
		exempli gratia		expected value	<i>E</i>
		(for example)	e.g.	greater than	>
		Federal Information		greater than or equal to	≥
		Code	FIC	harvest per unit effort	HPUE
		id est (that is)	i.e.	less than	<
		latitude or longitude	lat. or long.	less than or equal to	≤
		monetary symbols		logarithm (natural)	ln
		(U.S.)	\$, ¢	logarithm (base 10)	log
		months (tables and		logarithm (specify base)	log <sub>2</sub> , etc.
		figures): first three		minute (angular)	'
		letters	Jan,...,Dec	not significant	NS
		registered trademark	®	null hypothesis	H <sub>0</sub>
		trademark	™	percent	%
		United States		probability	P
		(adjective)	U.S.	probability of a type I error	
		United States of		(rejection of the null	
		America (noun)	USA	hypothesis when true)	$\alpha$
		U.S.C.	United States	probability of a type II error	
			Code	(acceptance of the null	
		U.S. state	use two-letter	hypothesis when false)	$\beta$
			abbreviations	second (angular)	"
			(e.g., AK, WA)	standard deviation	SD
				standard error	SE
				variance	
				population	Var
				sample	var
<b>Weights and measures (English)</b>					
cubic feet per second	ft <sup>3</sup> /s				
foot	ft				
gallon	gal				
inch	in				
mile	mi				
nautical mile	nmi				
ounce	oz				
pound	lb				
quart	qt				
yard	yd				
<b>Time and temperature</b>					
day	d				
degrees Celsius	°C				
degrees Fahrenheit	°F				
degrees kelvin	K				
hour	h				
minute	min				
second	s				
<b>Physics and chemistry</b>					
all atomic symbols					
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity	pH				
(negative log of)					
parts per million	ppm				
parts per thousand	ppt,				
	‰				
volts	V				
watts	W				

***FISHERY DATA SERIES NO. 08-14***

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THE YUKON RIVER AREA, 2006**

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# TABLE OF CONTENTS

	<b>Page</b>
LIST OF TABLES.....	iii
LIST OF FIGURES.....	iii
LIST OF APPENDICES .....	iii
ABSTRACT .....	1
INTRODUCTION.....	1
OBJECTIVES.....	3
METHODS.....	3
Sample Design.....	3
General Sampling Procedures.....	5
Sample Collection.....	5
Commercial Harvest Sampling.....	5
Subsistence Harvest Sampling.....	6
Test Fishery Sampling .....	6
Escapement Sampling.....	7
Age Determination .....	7
Data Processing and Analysis.....	8
RESULTS.....	8
Chinook Salmon .....	8
Chinook Salmon Commercial Harvest Age and Sex Composition.....	8
Chinook Salmon Subsistence Harvest Age and Sex Composition.....	9
Chinook Salmon Test Fishery Projects Age and Sex Composition .....	9
Chinook Salmon Escapement Projects Age and Sex Composition.....	10
Chinook Salmon Mean Length .....	10
Chinook Salmon Mean Weight and Mean Girth.....	11
Summer Chum Salmon.....	11
Summer Chum Salmon Commercial Catch Age and Sex Composition .....	12
Summer Chum Salmon Subsistence Harvest Age and Sex Composition .....	12
Summer Chum Salmon Test Fishery Projects Age and Sex Composition.....	12
Summer Chum Salmon Escapement Projects Age and Sex Composition .....	12
Summer Chum Salmon Mean Length.....	13
Fall Chum Salmon.....	13
Fall Chum Salmon Commercial Harvest Age and Sex Composition .....	13
Fall Chum Salmon Subsistence Harvest Age and Sex Composition .....	13
Fall Chum Salmon Test Fishery Projects Age and Sex Composition.....	13
Fall Chum Salmon Escapement Projects Age and Sex Composition .....	14
Fall Chum Salmon Mean Length.....	14

## TABLE OF CONTENTS (Continued)

	<b>Page</b>
Coho Salmon .....	14
Coho Salmon Commercial Harvest Age and Sex Composition.....	14
Coho Salmon Test Fishery Projects Age and Sex Composition .....	14
Coho Salmon Escapement Projects Age and Sex Composition.....	15
Coho Salmon Mean Length .....	15
DISCUSSION.....	15
Salmon Age Composition.....	16
Salmon Sex Composition .....	17
Salmon Length Composition .....	17
Chinook Salmon Weight and Girth Composition.....	18
ACKNOWLEDGEMENTS.....	18
REFERENCES CITED .....	19
TABLES AND FIGURES.....	21
APPENDIX A: CHINOOK SALMON TABLES .....	43
APPENDIX B: SUMMER CHUM SALMON TABLES.....	75
APPENDIX C: FALL CHUM SALMON TABLES .....	89
APPENDIX D: COHO SALMON TABLES .....	107

## LIST OF TABLES

Table	Page
1. Yukon River Chinook salmon age and female percentages from commercial, subsistence, test fishery, and escapement projects, 2006. ....	22
2. Yukon River Districts 1, 2, 3, and 5 Chinook salmon commercial harvest age and sex composition, 2006. ....	23
3. Yukon River District 1 Chinook salmon age and female percentages from commercial harvests using 8.0-inch or larger mesh gillnets, 1985–2006. ....	24
4. Yukon River Chinook salmon age and female percentages from the combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet test fishery catches, 1985–2006. ....	26
5. Yukon River Chinook salmon age and female percentages from selected escapement projects, 1985–2006. ....	27
6. Yukon River Chinook salmon mean lengths (mm) by project, gear, sex, and age, 2006. ....	30
7. Yukon River chum salmon age and female percentages from commercial, subsistence, test fishery, and escapement projects, 2006. ....	32
8. Yukon River Districts 1, 2, 3, and 6 summer chum salmon and Districts 1, 5, and 6 fall chum salmon commercial harvest age and sex composition, 2006. ....	33
9. Yukon River summer chum salmon age percentages from combined commercial and subsistence samples, 1985–2006. ....	35
10. Yukon River summer chum salmon age and female percentages from the combined Big Eddy and Middle Mouth 5.5-inch mesh gillnet test fishery catches, 1985–2006. ....	36
11. Yukon River summer and fall chum salmon mean lengths (mm) by project, gear, sex and age, 2006. ....	37
12. Yukon River coho salmon age and female percentages from commercial, test fishery, and escapement projects, 2006. ....	39
13. Yukon River coho salmon mean lengths (mm) by project, sex, gear, and age, 2006. ....	39

## LIST OF FIGURES

Figure	Page
1. Yukon River drainage in Alaska and Canada. ....	40
2. Lower Yukon Area statistical codes. ....	41
3. Upper Yukon Area statistical codes. ....	42

## LIST OF APPENDICES

Appendix	Page
A1. Yukon River, District 1, Chinook salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006. ....	44
A2. Yukon River, District 2, Chinook salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006. ....	45
A3. Yukon River, District 3, Chinook salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006. ....	46
A4. Yukon River, District 5 (Subdistricts 5-B and 5-C), Chinook salmon commercial harvest age and sex composition and mean length (mm), 2006. ....	47
A5. Yukon River, District 1, Chinook salmon subsistence 5.5-inch mesh gillnet harvest age composition, 2006. ....	48
A6. Yukon River, District 1, Chinook salmon subsistence 8.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2006. ....	48
A7. Yukon River, District 1, Chinook salmon subsistence 8.5-inch mesh gillnet harvest age composition, 2006. ....	49
A8. Yukon River, Subdistrict 4-A (Kaltag), Chinook salmon subsistence 8.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2006. ....	50

## LIST OF APPENDICES (Continued)

Appendix	Page
A9. Yukon River, Subdistrict 4-A (Nulato), Chinook salmon subsistence gillnet harvest age and sex composition and mean length (mm), 2006.....	51
A10. Yukon River, Subdistrict 4-A (Koyukuk), Chinook salmon subsistence gillnet harvest age composition, 2006.....	52
A11. Yukon River, Subdistricts 4-B, 4-C (Bishop Rock), Chinook salmon subsistence gillnet harvest age composition, 2006.....	53
A12. Yukon River, Subdistrict 4-C (Ruby), Chinook salmon subsistence gillnet harvest age composition, 2006.....	54
A13. Yukon River, Big Eddy, Chinook salmon 8.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.....	55
A14. Yukon River, Middle Mouth, Chinook salmon 8.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.....	56
A15. Yukon River, Big Eddy and Middle Mouth combined, Chinook salmon 8.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.....	57
A16. Yukon River, Big Eddy, Chinook salmon 8.25-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.....	58
A17. Yukon River, Middle Mouth, Chinook salmon 8.25-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.....	59
A18. Yukon River, Big Eddy and Middle Mouth combined, Chinook salmon 8.25-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.....	60
A19. Yukon River, Marshall, Chinook salmon 8.25-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	61
A20. Yukon River, Pilot Station sonar, Chinook salmon variable mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	62
A21. Yukon River, Eagle sonar, Chinook salmon variable mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	64
A22. Yukon River, Canada, Sheep Rock and White Rock, Chinook salmon fish wheel test fishery project age and sex composition and mean length (mm), 2006.....	65
A23. Andreafsky River (East Fork) weir, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.....	66
A24. Anvik River carcass survey, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.....	67
A25. Chena River carcass survey, Chinook salmon project age and sex composition and mean length (mm), 2006.....	68
A26. Gisasa River weir, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.....	69
A27. Salcha River carcass survey, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.....	70
A28. Tozitna River weir, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.....	71
A29. Sheenjek River gillnet, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.....	72
A30. Blind Creek weir, Canada, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.....	73
A31. Big Salmon River, Canada, carcass survey, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.....	74



## LIST OF APPENDICES (Continued)

Appendix	Page
B1. Yukon River, District 1, summer chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.....	76
B2. Yukon River, District 2, summer chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.....	77
B3. Yukon River, District 3, summer chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.....	78
B4. Yukon River, Subdistrict 6-B, summer chum salmon commercial harvest age and sex composition and mean length (mm), 2006. ....	79
B5. Yukon River, District 1, summer chum salmon subsistence 5.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2006. ....	80
B6. Yukon River, District 1, summer chum salmon subsistence 5.5-inch mesh gillnet harvest age composition, 2006. ....	80
B7. Yukon River, District 1, summer chum salmon subsistence 8.5-inch mesh gillnet harvest age composition, 2006. ....	81
B8. Yukon River, Big Eddy, summer chum salmon 5.5-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006. ....	82
B9. Yukon River, Middle Mouth, summer chum salmon 5.5-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006. ....	83
B10. Yukon River, Big Eddy and Middle Mouth combined, summer chum salmon 5.5-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006. ....	84
B11. Andreafsky River (east fork) weir, summer chum salmon escapement project age and sex composition and mean length (mm), 2006.....	85
B12. Anvik River sonar, summer chum salmon escapement project age and sex composition and mean length (mm), 2006. ....	86
B13. Gisasa River weir summer chum salmon escapement project age and sex composition and mean length (mm), 2006.....	87
B14. Tozitna River weir summer chum salmon escapement project age and sex composition and mean length (mm), 2006. ....	88
C1. Yukon River, District 1, fall chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006. ....	90
C2. Yukon River, Subdistricts 5-B, 5-C, fall chum salmon commercial fish wheel harvest age and sex composition and mean length (mm), 2006. ....	92
C3. Yukon River, District 6, fall chum salmon commercial fish wheel harvest age and sex composition and mean length (mm), 2006. ....	93
C4. Yukon River, Subdistrict 5-B, fall chum salmon subsistence fish wheel harvest age and sex composition and mean length (mm), 2006. ....	94
C5. Yukon River, Subdistrict 6-B, fall chum salmon subsistence harvest age and sex composition and mean length (mm), 2006. ....	95
C6. Yukon River, Big Eddy, fall chum salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006. ....	96
C7. Yukon River, Middle Mouth, fall chum salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	97
C8. Yukon River, Big Eddy and Middle Mouth combined, fall chum salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	98
C9. Yukon River, Mountain Village, fall chum salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006. ....	99
C10. Yukon River, Kaltag, fall chum salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006. ....	100
C11. Yukon River, Eagle Sonar, summer chum salmon variable mesh drift gillnet test fishery project age and sex composition and mean length, 2006.....	101

## LIST OF APPENDICES (Continued)

<b>Appendix</b>	<b>Page</b>
C12. Yukon River, Eagle Sonar, summer chum salmon 5.75-inch set gillnet test fishery project age and sex composition and mean length, 2006.....	102
C13. Yukon River, Canada, Sheep Rock and White Rock, fall chum salmon fish wheel test fishery project age and sex composition and mean length (mm), 2006.....	103
C14. Delta River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.....	104
C15. Sheenjek River beach seine, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.....	104
C16. Toklat River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.....	105
C17. Chandalar River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.....	105
C18. Salcha River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.....	106
 D1. Yukon River, District 1, coho salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.....	 108
D2. Yukon River, Big Eddy, coho salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	110
D3. Yukon River, Middle Mouth, coho salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	110
D4. Yukon River, Big Eddy and Middle Mouth combined, coho salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	111
D5. Yukon River, Mountain Village, coho salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	111
D6. Yukon River, Kaltag, coho salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.....	112
D7. Otter Creek (Nenana River), coho salmon escapement project age and sex composition and mean length (mm), 2006.....	112

## ABSTRACT

Biological data were collected from Chinook *Oncorhynchus tshawytscha*, summer chum *O. keta*, fall chum *O. keta*, and coho salmon *O. kisutch* runs at 35 locations along the Yukon River drainage in 2006. Age, sex, and length (ASL) data were obtained from 9,835 Chinook, 5,090 summer chum, 6,473 fall chum, and 1,360 coho salmon from commercial and subsistence harvests, as well as test fisheries and escapement projects. Samples were collected from gillnets, fish wheels, beach seines, weir traps, and from carcass surveys. Where available, escapement estimates from sonar and weir projects were separated into temporal segments (strata), and commercial harvest numbers were separated into periods and characterized by the ASL data collected during the corresponding strata or period.

In 2006, Chinook salmon commercial harvests were primarily composed of age-1.3 (50.4%) and age-1.4 (46.0%) fish. Chinook salmon age-1.2 and age-1.5 percentages were below average in many of the commercial and escapement projects. Summer chum salmon commercial harvests in Districts 1, 2, 3, and 6 were dominated by age-0.4 fish (84.2%). Fall chum salmon commercial harvests in Districts 1, 5, and 6, were primarily composed of age-0.3 (45.1%) and age-0.4 fish (52.9%). In 2006, summer chum salmon age-0.4 percentages were above average compared with historical percentages.

Key Words: ASL, salmon, Yukon River, Chinook, summer chum, fall chum, coho, age, sex, length, escapement, weir, test fish, subsistence, commercial, *Oncorhynchus tshawytscha*, *O. keta*, *O. kisutch*.

## INTRODUCTION

The Yukon River drainage encompasses coastal waters from Canal Point light, near Cape Stephens, southward to the Naskonat Peninsula (Vania et al. 2002) to the headwaters upstream of Whitehorse, Canada (Figure 1). The Yukon River drainage supports major runs of Chinook *Oncorhynchus tshawytscha*, summer chum *O. keta*, fall chum *O. keta*, and coho salmon *O. kisutch*. All 3 of these salmon species are harvested in commercial, subsistence, personal use, test, and sport fisheries in Alaska. Harvests also occur in the Canadian portion of the Yukon River drainage by commercial, subsistence, aboriginal, sport, and domestic fishers (JTC 2006a). Pink *O. gorbuscha* and sockeye salmon *O. nerka* are also indigenous to the drainage, however, neither species are harvested by fishers to any significant extent.

Historically, the first adult Chinook and summer chum salmon runs enter the mouth of the Yukon River during late May to begin their upstream migration. These runs are followed by fall chum salmon, which enter the Yukon River from mid July through early September. Fall chum are genetically distinct from summer chum salmon (Crane et al. 2001). Summer chum can be distinguished from their fall counterparts by their smaller size, lower oil content, and spawning locations. Summer chum spawn in the lower and middle portion of the drainage, whereas fall chum salmon spawn in the upper portion of the drainage (Vania et al. 2002). Coho salmon enter the Yukon River from late July through September.

Commercial fishing occurs throughout the mainstem Yukon River and in the lower 360 km of the Tanana River. For management purposes, the Alaskan portion is divided into 7 districts and 10 subdistricts (Figures 2 and 3). The Lower Yukon Area consists of the Coastal District and Districts 1, 2, and 3. Set and drift gillnets are the only legal gear in the Lower Yukon Area (ADF&G 2004). During the summer season when Chinook salmon are targeted, commercial fishing in the Lower Yukon Area is typically restricted to 8-inch and larger mesh sizes or unrestricted mesh size. The Upper Yukon Area consists of Districts 4, 5, and 6. Historically, set gillnets and fish wheels were the only legal gear type in the Upper Yukon Area, except for Subdistrict 4-A where drift gillnets were allowed (ADF&G 2004). In 2005, regulations changed to allow drift gillnets to be used in Subdistricts 4-B and 4-C. The majority of the commercially

caught Chinook salmon are harvested from Districts 1 and 2, with smaller harvests occurring in Districts 3, 5 and 6. In recent years, summer chum salmon have not been targeted by commercial fishers (S. Hayes, Commercial Fisheries Summer Season Area Manager, ADF&G, Anchorage; personal communication), although in 2006, there was 1 chum directed District 2 commercial fishing period with gear restricted to gillnets with mesh  $\leq 6$ -inch. Fall chum and coho salmon are typically commercially harvested in Districts 1, 2, 5, and 6. Canadian fishers harvest Chinook and fall chum salmon predominantly with gillnets and fish wheels near Dawson, Yukon Territory (JTC 2006a).

Subsistence fishing occurs throughout the drainage, with most of the effort concentrated in the mainstem Yukon River. Alaska state law mandates that subsistence use of fish populations has priority over other uses (AS 16.05.258; ADF&G 2004). Chinook, summer chum, fall chum, and coho salmon are the principal salmon species utilized by subsistence fishers. The primary gear types used by subsistence salmon fishers in Districts 1, 2, and 3 are set and drift gillnets; a mixture of gillnets and fish wheels is used in Districts 4, 5, and 6 (Busher and Hamazaki 2005). As with commercial fishing, there was no mesh size restriction in the Lower Yukon Area for subsistence gillnets (ADF&G 2004). Many fishers chose 8-inch or larger mesh sizes, known as 'king nets', early in the summer run to target larger Chinook salmon; they changed to 6-inch or smaller mesh sizes, known as 'chum nets', later in the summer run to target smaller chum salmon.

Test fishery projects provide assessments of run strength, timing, and age and sex composition. Test fishery projects were operated in the mainstem Yukon River; hence, the harvest was composed of mixed stocks. Recent test fishery projects that operated during the Chinook and summer chum salmon season were Big Eddy and Middle Mouth set gillnet (1979–2006) and Big Eddy and Middle Mouth drift gillnet (2001–2003, 2005–2006) in District 1 near Emmonak, Pilot Station sonar drift gillnet (1963–2006) and Marshall drift gillnet (1999–2000, 2005–2006) in District 2, Eagle sonar drift gillnet (2005–2006) just downstream of the Alaska-Canada border, and Sheep Rock and White Rock fish wheels (1982–2006) in Canada just upstream of the border (Figures 1 and 2). Test fishery projects that operated during the fall chum and coho salmon season were Big Eddy and Middle Mouth drift gillnet (2001–2006), Mountain Village drift gillnet (1995–2006) in District 2, Kaltag drift gillnet (1991–2006) in Subdistrict 4-A, Eagle sonar drift gillnet (2005–2006) and set gillnet (2006), and Sheep Rock and White Rock fish wheels (1982–2006) in Canada (Figures 1 and 2).

Annual assessments of spawning escapements were monitored in Yukon River tributaries by means of weirs, counting towers, sonar projects, and aerial surveys (Vania et al. 2002). The ground based weir, tower, and sonar projects typically included a sampling program, whereby salmon were captured with a trap built into a weir, fishing a beach seine, or carcass sampling. Current weir projects operating in the Yukon River drainage are the East Fork Andreafsky River weir (1981–2006, operated as sonar and tower some years) near Saint Mary's and the Tozitna River weir (2002–2006) downstream of the village of Tanana (Figures 2 and 3). The Gisasa River weir (1994–2006) was operated in a tributary of the Koyukuk River. The Chena River tower (1993–2006) and Salcha River tower (1993–2006) were operated in tributaries of the Tanana River near Fairbanks (Figure 3). Other projects that were operated in the Tanana River drainage were the Toklat River carcass survey (1994–2006, operated as sonar some years) in a tributary of the Kantishna River and the Delta River escapement/tagging/carcass survey (1971–2006) near Delta Junction. The Anvik River sonar project (1979–2006) was operated near Anvik, the Sheenjek River sonar (1981–2006), a tributary of the Porcupine River, was operated upstream of Fort Yukon, and the Chandalar River

River sonar and carcass survey (2005–2006) was conducted near Venetie (Figures 2 and 3). Escapement projects that were operated in Canada include the Blind Creek weir (1995–2000, 2003–2006) and the Big Salmon River carcass survey (sporadic sampling occurred in the late 1980s and early 1990s and a dedicated carcass program began in 2006).

Yukon River drainage salmon age, sex, and length (ASL) data have been collected since 1960. Data were historically recorded on handwritten forms, computerized mark-sense forms, and most recently, electronic data loggers. Annual Yukon ASL data summaries have been reported in various formats. From 1962 through 1968 these data were reported in Annual Management Reports or Arctic Anadromous Fishery Investigation Reports. From 1969 through 1981 data were reported in Salmon Age, Sex, and Size Composition, an Alaska Department of Fish and Game (ADF&G) special report series. From 1982 through 1988 data were published in the Technical Fisheries Report series (e.g., Buklis 1987). For the years 1989, 1992, and 1994 data were published in the Regional Information Report series (e.g., Menard 1996). For the years 1990, 1991, 1993, and 1995 through 2003, Yukon ASL data were reported as an unpublished memorandum (e.g., DuBois 2004). In 2004, ADF&G Division of Commercial Fisheries (CFD) began using the ADF&G Division of Sport Fish Fishery Data Series to report annual Yukon ASL data (e.g., Bales 2007). Currently, there is an ADF&G project to incorporate all historic salmon ASL data into a centralized database; it is expected that this project will be completed shortly and will be accessible to the public in June 2007.

The purpose of this report is to present the 2006 Yukon River drainage salmon ASL summary data collected from various commercial and subsistence harvests, test fisheries, and escapement projects throughout the drainage. Summary data are presented as sample percentages and by numbers of fish where possible. ASL data and summaries provide the basis for a variety of analyses including pre-season run outlooks, assessment of the proportion of females and older aged fish in escapements, and development of spawner-recruit models and biological escapement goals.

## **OBJECTIVES**

Summarize age, sex, and length data from Chinook, summer chum, fall chum, and coho salmon collected by various organizations in the Yukon River drainage.

## **METHODS**

Chinook, summer chum, fall chum, and coho salmon were sampled for ASL data from commercial and subsistence harvests, as well as test fishery, and escapement projects throughout the Yukon River drainage. Various state, federal, Canadian, and tribal agencies collected these data. ADF&G staff based in Anchorage process, analyze, and report ASL summary information. Methods described are those procedures recommended by ADF&G; other organizations may have collected and recorded data using slightly different procedures.

## **SAMPLE DESIGN**

A stratified random sampling design was used to obtain samples for estimating age, sex, and length compositions from most projects. Strata were assigned as individual fishing periods for commercial harvest samples, time strata of variable length for escapement estimates (weir and sonar projects), weekly strata for subsistence samples, run strength indices (such as quartiles for

test fishery projects), and number of fish sampled for carcass samples. Strata were adjusted depending on the number and distribution of samples collected and an attempt was made to include sufficient sample sizes within each stratum to estimate the proportion of each major age class with  $\alpha=0.05$  and  $d=0.1$  (Bromaghin 1993). The escapement/harvest for each stratum was provided by project leaders and ADF&G fish ticket harvest reports.

Proportion of  $j$ -th age-sex class at  $s$ -th strata ( $\hat{P}_{sj}$ ) was estimated as:

$$\hat{P}_{sj} = \left( \frac{n_{sj}}{n_s} \right) \quad (1)$$

Where:

$n_{sj}$  = number of samples for age-sex class  $j$  in stratum  $s$ ,

$n_s$  = number of samples in stratum  $s$ ,

The number of  $j$ -th age-sex class at  $s$ -th strata ( $\hat{N}_{sj}$ ) was estimated as:

$$\hat{N}_{sj} = N_s \cdot \hat{P}_{sj} \quad (2)$$

Where:

$N_s$  = escapement/harvest of age-sex class  $j$  in stratum  $s$ ,

When data for all strata were available, season-wide proportion and number of  $j$ -th age-sex class was estimated as:

$$\hat{P}_j = \frac{1}{N} \sum^s N_s \hat{P}_{sj} \quad (3)$$

$$\hat{N}_j = \sum^s N_s \hat{P}_{sj}$$

Where:

$N$  = total season escapement/harvest.

As observed from a given location, the ASL composition of a returning salmon population often changes over the course of the season (Molyneaux et al. 2006); therefore, sample proportions were applied to harvest or escapement estimates only when adequate sample size, strata distribution, and numbers of fish by stratum were available. Commercial harvest samples and tributary escapement monitoring projects utilizing weir or sonar typically met the criteria for stratification. Subsistence, test fishery, and carcass sampling projects frequently failed to meet one or more of these criteria and were summarized by number of samples. Sample age and sex percentages were weighted by the respective harvest or escapement from all species in the commercial harvests, all species at the East Fork Andreafsky River, summer chum salmon in the Anvik River, all species in the Gisasa River, and all species in the Tozitna River. Length data were also weighted by the respective harvest or escapement for all escapement projects and for the District 5 commercial fall chum harvests.

## **GENERAL SAMPLING PROCEDURES**

Scales were removed from the preferred area of the fish and mounted on gum cards for future age determination in the ADF&G laboratory (INPFC 1963). The preferred area is located on the left side of the fish, 2 rows above the lateral line along a line from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin. One scale was removed from each chum salmon and 3 scales were removed from each Chinook and coho salmon. Scale regeneration, or scale loss and rapid replacement, contributes to aging uncertainties primarily in the freshwater growth area. Chinook and coho salmon usually rear in freshwater for 1 year or longer, hence 3 scales were removed from these fish to increase the chance of selecting a scale that could be aged. In some tributaries, vertebrae were used to age fall chum salmon when scale reabsorption makes aging scales difficult. Vertebrae were removed from fish collected during selected carcass sampling and beach seining projects.

Sex was determined by examining internal reproductive organs or external characteristics such as kype development and presence of reproductive organs at the vent. Lower Yukon test fishery projects (LYTF; including Big Eddy and Middle Mouth) and carcass sampling surveys were the only projects where internal organs were examined; hence, these projects have accurate sex composition. Other test fishery projects conducted by non-ADF&G staff were instructed to examine internal organs, however, this protocol may not have been adhered to in all projects. Internal organs were not examined from commercial and subsistence harvests and some non-ADF&G staffed test fisheries because cutting fish would decrease fish value to commercial buyers and subsistence fishers prefer to cut their fish immediately before processing.

Lengths from fish sampled in Alaska were determined by measuring each fish from mid-eye to tail fork and were recorded to the nearest 5-mm increment. Field data were recorded in Rite-in-the-Rain<sup>1</sup> books and transferred to mark-sense forms (ADF&G Adult Salmon Age-Length Form, Version 2.1) or entered into MS-Excel files. During the lower river commercial harvest, test, and subsistence sampling, sex and length data were entered directly into Juniper data loggers and loaded into an inseason database which streamlined analyses.

Weights (lbs) and girths (mm) were collected from Chinook salmon sampled in the LYTF projects. Weight was taken at the dock using a hanging warehouse scale suspended from a tripod. Girth was measured while the fish was hanging from the scale, with a “QM2000 Measure Mate – Girth and Linear Measure Tape,” perpendicular to the longitudinal axis of the fish at the anterior insertion of the dorsal fin and recorded to the nearest 5-mm increment.

## **SAMPLE COLLECTION**

### **Commercial Harvest Sampling**

CFD crews conducted commercial harvest sampling for Chinook, summer and fall chum, and coho salmon in Districts 1, 2, 3, 5, and 6. Sample goals were up to 400 Chinook salmon, 160 summer and fall chum salmon, and 120 coho salmon by period and district. District 1 samples were collected from fish processors in Emmonak, District 2 samples were from fish processors in Mountain Village and St. Mary's, and District 3 samples were from a fish processor in Marshall (Figure 2). Off-loading crews placed each salmon in a species-specific tote or bin. When excess fish were not available, CFD crews sampled all available fish until the sample goal was attained.

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<sup>1</sup> Product names used in this report are included for scientific completeness, but do not constitute a product endorsement.

When excess fish were available, sampling crews selected a tote of fish and sampled every fish in the tote. Sampling crews worked quickly to attain sampling goals in the short time between fish delivery and processing.

Commercial harvests from Chinook and summer and fall chum salmon in Districts 5 and 6 were sampled at a processing plant in North Pole near Fairbanks. Similar to lower river sampling, CFD crews arrived before fish deliveries and worked quickly to achieve sample goals before processing began. District 5 fall chum salmon were also delivered to Kenai and sampled by local CFD staff.

### **Subsistence Harvest Sampling**

Collecting subsistence harvest samples is opportunistic and depends on timing, availability, logistics, and willingness of fishers to participate. Crews typically sample every fish available because finding fish to sample, specifically when boat travel among fishing camps is required, is time consumptive. Subsistence harvest sampling design is therefore what Geiger et al. (1990) termed a “grab or haphazard sample,” where the population is assumed to be nearly in random order and all available fish are sampled. Assuming consistent effort by samplers, more fish are sampled when more fish are available which tends to self-weight the samples by gear, area, and time period collected.

Subsistence harvests of Chinook and summer chum salmon in District 1 were sampled by CFD staff. Crews sampled fish during weekly subsistence fishing openings in District 1, which occurred from 8 PM Monday to 8 AM Wednesday and from 8 PM Thursday to 8 AM Saturday. Typically, on Tuesdays and Fridays, crews traveled by boat to subsistence fishing camps for sampling. In addition to sex and length data, mesh size was recorded as either chum or king gear as part of a United States Fish and Wildlife Service (USFWS) inseason survey. If fish were already processed, scales were collected without corresponding sex and length data.

The Yukon River Drainage Fisheries Association employed individuals from selected villages to sample subsistence harvests of Chinook salmon. These samples were primarily from villages and fishing camps located in District 4 along the mainstem Yukon River: Nulato, Koyukuk, Bishop Rock, and Ruby. When sex and length data were unavailable or not corresponding with age data, only age composition was summarized.

The City of Kaltag collected Chinook salmon samples from Subdistrict 4-A and CFD crews collected fall chum salmon samples from Subdistricts 5-B and 6-B.

### **Test Fishery Sampling**

Test fishery crews sampled up to 30 Chinook, summer chum, and fall chum salmon daily; and up to 20 coho salmon daily. CFD test fishery crews at the LYTF projects sampled Chinook salmon from 8.5-inch mesh set gillnets and 8.25-inch mesh drift gillnets, summer chum salmon from 5.5-inch drift gillnets, and fall chum and coho salmon from 6.0-inch mesh drift gillnets. Fish sampled from the LYTF projects were cut for accurate sex determination. At Marshall, the Association of Village Council Presidents test fishery crew sampled Chinook salmon using 8.25-inch drift gillnets. Test fishery crews in Mountain Village (Asacarsarmiut Traditional Council) and Kaltag (City of Kaltag) sampled fall chum and coho salmon from 5 7/8-inch drift gillnets. The Pilot Station sonar crew (CFD) sampled Chinook salmon using drift gillnets of varying mesh sizes (2.75-inch, 4.0-inch, 5.0-inch 5.25-inch, 5.75-inch, 6.5-inch, 7.5-inch, and 8.5-inch). The Eagle sonar crew (CFD) also sampled Chinook and fall chum salmon using drift gillnets of varying mesh sizes



(2.75-inch, 4.0-inch, 5.25-inch, and 7.5-inch), as well as 5.75-inch set gillnets. Test fishery crews sampled every fish harvested until their daily sample goal was reached. Fish wheels were operated just upstream of the Alaska-Canada border at the Sheep Rock and White Rock sites where Canada Department of Fisheries and Oceans (DFO) sampled Chinook and fall chum salmon.

## **Escapement Sampling**

Several organizations operating weirs, seines, sonar projects, counting towers, and other ground-based surveys conducted escapement sampling. Sampling goals varied among projects, but were loosely defined as 160 Chinook, 160 summer or fall chum, and 120 coho salmon per event. An event may be weekly sampling goals, quartile-based goals, or a single postseason goal. Depending on the strength of the run, sample goals may only be achieved during periods of peak run passage at weir projects. Suggested sample goals, specific project objectives, fish abundance, historical fish passage, run timing, water levels, personnel, and budget are some of the issues considered by project leaders when assessing sample goals.

Chinook and summer chum salmon were live sampled using a trap built into weirs at the East Fork Andreafsky, Gisasa, and Tozitna rivers and at Blind Creek in Canada. Summer chum salmon were live-sampled using a beach seine in the Anvik River. An example of weir sampling and operation methods is provided by Sundlov et al. (2003). Chinook salmon carcasses were sampled using ground based surveys in the Anvik, Chena, and Salcha rivers and at the Big Salmon River in Canada. Doxey et al. (2005) describes carcass sampling methods in the Chena and Salcha rivers.

Five fall chum salmon escapement projects, operating on the Chandalar, Delta, Sheenjek, Toklat, and Salcha rivers, used vertebrae to determine ages. The fish sampled in these projects were either hand-picked carcasses or captured with a beach seine at or near the spawning grounds. Because fish near the spawning grounds have started to reabsorb their scales, vertebrae are a more accurate aging structure than fish scales. Coho salmon were sampled with rod and reel from Otter Creek on the Nenana River.

USFWS collected samples at the East Fork Andreafsky, Gisasa, and Chandalar rivers. Samples from the Tozitna River were collected by the Bureau of Land Management. CFD collected samples from the Anvik, Chena, Salcha, Toklat, Delta, and Sheenjek rivers. Bering Sea Fishermen's Association collected samples from the Salcha River and Otter Creek. The Council of Athabascan Tribal Governments collected samples from the Sheenjek River. DFO collected samples from the Canadian projects.

## **AGE DETERMINATION**

Age is determined from the annuli of scales or vertebrae samples. The scales, which are mounted on gum cards, are impressed in cellulose acetate using methods described by Clutter and Whitesel (1956). Scale impressions were magnified and examined using a Microfiche reader. Age was determined by counting the number of freshwater and marine annuli, the regions of the scale where the circuli, or rings, are tightly spaced representing slower growth rates associated with winter conditions (Mosher 1969). Vertebrae samples are frozen, cleaned, and dried; ages are also determined by counting the annuli that form during winter conditions. Ages were entered into MS-Access, onto mark-sense forms, or into a MS-Excel file depending upon which format sex and length data were originally recorded in. Ages were recorded using European notation,

the number of freshwater annuli separated by a decimal from the number of marine annuli. Total age from the brood year is the sum of freshwater and marine annuli plus 1 to account for time spent in the gravel before hatching.

## **DATA PROCESSING AND ANALYSIS**

Age, sex, and length data collected from various projects were summarized by species, project, and gear type. Chinook and summer chum salmon ASL data from lower river commercial harvests (Districts 1, 2 and 3), District 1 subsistence harvest, and LYTF projects were summarized using a MS-Access database. Students from the University of Alaska in Anchorage created this database and wrote summary ASL programs. These programs summarized sample data only; ADF&G staff was responsible for applying sample data to harvest numbers. Most other projects used mark-sense forms for recording data. An OpScanner reads the mark-sense forms and creates an ASCII file. Summary programs were run which weight the season total for age, sex, and average length by the harvest or escapement in each stratum from the processed mark-sense forms. A third data processing method was used for data received in MS-Excel format and summaries were based on sample sizes calculated using MS-Excel functions. The District 5 and 6 commercial ASL data were received in MS-Excel format and weighted by harvest.

Selected age and sex comparisons were performed between current year and historical average values. The p-values associated with age and sex composition comparisons were calculated using 1-tailed  $z$ -tests. The length and age distributions of males and females were compared for all species sampled from the LYTF projects. Kolmogorov-Smirnov (K-S) tests were used to compare length, weight, and girth distributions and chi-square analyses were used to compare age frequency distributions. The average lengths, weights, and girths of males and females sampled from the LYTF projects were compared using 2-tailed  $t$ -tests (Zar 1996). LYTF samples were selected for the male and female comparisons because these fish were accurately sexed by examining the internal reproductive organs. All statistical analyses were performed at a significance level of  $\alpha=0.05$ .

## **RESULTS**

### **CHINOOK SALMON**

A total of 9,835 Chinook salmon were sampled for ASL data from the Yukon River drainage in 2006 (Table 1). Chinook salmon ASL summary tables for commercial and subsistence harvests, test fisheries, and escapement sampling projects are presented in Tables 1–6 and Appendices A1–A31.

#### **Chinook Salmon Commercial Harvest Age and Sex Composition**

Commercial harvest samples were collected from 3,800 Chinook salmon in Districts 1, 2, 3, and 5 (Tables 1 and 2; Appendices A1–A4). The age and sex from these samples were applied to the harvests by ADF&G. In one District 2 commercial fishing period, gillnets were restricted to  $\leq 6$ -inch mesh size, while in all other commercial periods in Districts 1, 2, and 3 fishers were permitted unrestricted mesh size gillnets. During the summer season, the lower river commercial fishery was directed towards Chinook salmon because the summer chum salmon market was lacking; therefore 8.0-inch or larger mesh gillnets were likely used. Gillnets and fish wheels were

used in District 5. The combined age composition of the Yukon River Chinook salmon commercial harvest samples in 2006 was primarily made up of both age-1.3 (50.4%) and age-1.4 (46.0%) fish. Females represented 48.0% of the total (Table 2).

Table 3 presents the District 1 commercial Chinook salmon age distribution from 8.0-inch and larger mesh gillnets from 1985 through 2006. In 2006, the percentage of 5-year old fish (46.8%) was almost twice the historical average (24.3%) and 6-year old fish (49.8%) was lower than the average (62.4%). The percentages of both 4-year and 7-year old fish in 2006 were lower than the historical averages. The percentage of the 2006 samples that were female (54.9%) was above the historical average of 51.2%.

Comparing the 2006 percentages to the 5-year (2001–2005) averages, all age groups were significantly different (z-tests,  $p \leq 0.01$  for each test). The 2006 District 1 commercial harvest showed a 1.2% decrease in 4-year old fish, a 19.9% increase in 5-year old fish, a 13.0% decrease in 6-year old fish, and a 5.7% decrease in 7-year old fish when compared to the 5-year average. There was no significant difference when comparing the 2006 female percentages to the 5-year average.

### **Chinook Salmon Subsistence Harvest Age and Sex Composition**

Subsistence harvest samples were collected from 771 Chinook salmon in Districts 1 and 4 (Table 1; Appendices A5–A12). Subsistence harvest estimates are not available; therefore, sample age and sex percentages by location and gear type are reported. Subsistence harvest samples were collected from 5.5-inch and 8.5-inch mesh gillnets in District 1, and 8.5-inch and unknown mesh size gillnets in District 4 (Subdistricts 4-A, 4-B, and 4-C). The age composition of the subsistence samples was similar to the commercial harvest, with age-1.3 and age-1.4 fish most prevalent. One exception to this was samples collected from smaller 5.5-inch mesh gillnets in District 1, which had a larger percentage of age-1.2 (28.6%) fish than age-1.4 (7.1%), although the sample size was only 14 fish. The percentage of females in the subsistence samples ranged from 21.7% of the Koyukuk samples to 68.2% of the Kaltag samples.

### **Chinook Salmon Test Fishery Projects Age and Sex Composition**

Samples were collected at 5 test fishery project sites from 2,920 Chinook salmon in the Alaskan portion of the Yukon River (Table 1; Appendices A13–A22). Samples were stratified by test fishery catch quartiles or by mesh size at Pilot Station and Eagle Sonar. The age distribution of the 2006 test fishery samples differed between projects. The Big Eddy and Middle Mouth 8.25-inch mesh drift gillnet projects had the highest percentages of age-1.4 fish with 55.9% and 67.6%, respectively. The lowest percentages of age-1.4 fish were at the Canadian fish wheels (20.0%) and the Pilot Station (35.4%) and Eagle (20.9%) sonar projects. These projects also had the highest percentages of age-1.2 fish with 20.3% at the Canadian fish wheels, 5.5% at Pilot Station, and 16.9% at Eagle. Age-1.3 fish dominated the samples from 3 test fishery projects fishing large mesh gear: Big Eddy and Middle Mouth 8.5-inch mesh set gillnet and the Marshall 8.25-inch mesh drift gillnet (51.2%, 49.9%, and 52.2%, respectively). The percentage of females in the test fishery samples ranged from 25.9% at the Canadian fish wheels to 62.2% in the Middle Mouth 8.25-inch mesh drift gillnet.

There was a significant difference in age compositions between male and female Chinook salmon collected in the LYTF projects (chi-square=184.7,  $df=3$ ,  $p < 0.0001$ ). Males were

comprised of a higher proportion of younger fish (ages-1.2 and -1.3) and females were comprised of a higher proportion of older fish (ages-1.4 and -1.5; Appendices A15 and A18).

Table 4 presents the combined Big Eddy and Middle Mouth Chinook salmon age distribution from the 8.5-inch mesh set gillnet test fishery catches from 1985 through 2006. In 2006, the percentage of 5-year old fish (50.6%) was twice the historical average (25.3%), 6-year old fish (45.0%) was lower than the average (66.4%), and 7-year old fish (2.2%) was lower than the average (6.7%). Females made up 48.5% of the 2006 samples, which was below the historical average of 53.4%.

Comparing the 2006 percentages to the 5-year (2001–2005) averages, 5-, 6-, and 7-year old and female percentages were significantly different (z-tests,  $p \leq 0.01$  for each test). The 2006 8.5-inch mesh set gillnet test fishery catch showed a 27.6% increase in 5-year old fish, a 23.6% decrease in 6-year old fish, a 4.3% decrease in 7-year old fish, and a 5.2% decrease in females when compared to the 5-year average. There was no significant difference when comparing the 2006 4-year old percentages to the 5-year average.

### **Chinook Salmon Escapement Projects Age and Sex Composition**

Samples were collected from 2,344 Chinook salmon at 9 escapement sampling locations in tributaries of the lower, middle, and Canadian portions of the Yukon River (Table 1; Appendices A23–A31). Age and sex composition from the weir trap samples collected at the East Fork Andreafsky River, Gisasa River, and Tozitna River escapement monitoring projects were applied to the escapement estimates. These estimates are preliminary and individual project reports by the participating agencies should be referenced for final escapement, age, and sex estimates. Age-1.3 Chinook salmon dominated at most escapement sampling projects, ranging from 40.0% in the Big Salmon River carcass samples to 82.6% in the Tozitna River weir samples. Projects with relatively high percentages of age-1.2 fish include the East Fork Andreafsky River (17.0%) and the Gisasa River (18.9%). The percentage of females in the escapement samples ranged from 11.6% in the Tozitna River weir samples to 54.4% in the Big Salmon River carcass samples.

A historical summary of age and female percentages from long-standing escapement projects is presented in Table 5. At the Anvik and Salcha rivers, samples were collected using carcass surveys. At the Chena River, samples were collected primarily from carcasses; however, some years include a mixture of samples from carcasses and electro-shocked fish. The East Fork Andreafsky River samples were collected from a weir trap since 1994; before that, sample collection methods were not well documented. The percentages of age-1.3 fish in the 2006 samples were above the historical averages for all 4 locations (Table 5).

### **Chinook Salmon Mean Length**

The mean lengths of Chinook salmon, by sex and project, are summarized in Table 6. The average mean length for males by age was: 569 mm for age 1.2, 736 mm for age 1.3, 550 mm for age 2.2, 828 mm for age 1.4, 728 mm for age 2.3, 913 mm for age 1.5, and 901 mm for age 2.4. The average mean length for females by age was: 390 mm for age 1.1, 593 mm for age 1.2, 778 mm for age 1.3, 852 mm for age 1.4, 772 mm for age 2.3, 889 mm for age 1.5, and 833 mm for age 2.4.

There were significant differences in the mean lengths (2-tailed t-tests;  $p < 0.0001$ ,  $df=1199$ ) and length distributions (K-S test;  $p < 0.0001$ ) between male and female Chinook salmon collected in the LYTF projects. Males had a mean length of 780 mm and were smaller on average than

females, which had a mean length of 843 mm. There were also significant differences in the mean lengths and length distributions between males and females within select age groups. Chinook salmon age-1.3 males had a smaller mean length than age-1.3 females (770 mm and 812 mm, respectively;  $p < 0.0001$ ,  $df = 545$ ). Age-1.4 fish showed the same trend, with males having a smaller mean length than females (841 mm and 857 mm, respectively;  $p < 0.01$ ,  $df = 517$ ). Length distribution comparisons of males and females for each age group were also significant ( $p < 0.01$  for both age-1.3 and -1.4 fish).

### **Chinook Salmon Mean Weight and Mean Girth**

The mean weights and girths of Chinook salmon sampled from the LYTF projects are summarized in Appendices A13–A18. The mean weight of males from the LYTF samples ranged from 7.1 lbs for age-1.2 fish to 27.8 lbs for age-1.5 fish. The mean weight of females ranged from 19.5 lbs for age-1.3 fish to 21.1 lbs for age-1.5 fish. The mean girth of males from the LYTF samples ranged from 360 mm for age-1.2 fish to 549 mm for age-1.5 fish. The mean girth of females ranged from 506 mm for age-1.3 fish to 519 mm for age-1.5 fish.

Weight and girth comparisons of male and female Chinook salmon showed trends similar to the length comparisons. There were significant differences in the weights (2-tailed t-tests;  $p < 0.0001$ ,  $df = 1036$ ) and weight distributions (K-S test;  $p < 0.0001$ ) between male and female Chinook salmon collected in the LYTF projects. Males had a mean weight of 17.5 lbs and were smaller on average than females, which had a mean weight of 21.5 lbs. There were also significant differences in the mean weights and weight distributions between males and females within the different age groups. Chinook salmon age-1.3 males had a smaller mean weight than age-1.3 females (16.7 lbs and 19.5 lbs, respectively;  $p < 0.0001$ ,  $df = 472$ ). Age-1.4 fish showed the same trend, with males having a smaller mean weight than females, however this difference was not significant (21.5 lbs and 22.4 lbs, respectively;  $p = 0.08$ ,  $df = 448$ ). The small number of age-1.5 fish sampled showed the opposite trend, with males having a larger mean weight than females (27.8 lbs and 21.3 lbs, respectively;  $p = 0.03$ ,  $df = 16$ ). Weight distribution comparisons of males and females for each age group were also significant ( $p \leq 0.015$  all comparisons).

There were also significant differences in the girths (2-tailed t-tests;  $p < 0.0001$ ,  $df = 1198$ ) and girth distributions (K-S test;  $p < 0.0001$ ) between male and female Chinook salmon collected in the LYTF projects. Males had a mean girth of 481 mm and were smaller on average than females, which had a mean girth of 520 mm. There were also significant differences in the mean girths and girth distributions between males and females within select age groups. Chinook salmon age-1.3 males had a smaller mean girth than age-1.3 females (475 mm and 506 mm, respectively;  $p < 0.0001$ ,  $df = 544$ ). Age-1.4 fish showed the same trend, with males having a smaller mean girth than females (517 mm and 527 mm, respectively;  $p = 0.04$ ,  $df = 517$ ). Girth distribution comparisons of males and females for each age group were also significant ( $p < 0.01$  for both age-1.3 and -1.4 fish). There were no significant differences in the mean girths or girth distributions of age-1.5 Chinook salmon from the LYTF projects.

### **SUMMER CHUM SALMON**

A total of 5,090 summer chum salmon were sampled for ASL data from the Yukon River drainage in 2006 (Table 7). Summer chum salmon ASL summary tables for commercial and subsistence harvests, test fisheries, and escapement sampling projects are presented in Tables 7–11; Appendices B1–B14.

## **Summer Chum Salmon Commercial Catch Age and Sex Composition**

Commercial harvest samples were collected from 1,939 summer chum salmon in Districts 1, 2, 3, and 6 (Tables 7 and 8; Appendices B1–B4). One District 2 commercial fishing period was restricted to  $\leq 6$ -inch mesh gillnets, while all other commercial periods in Districts 1, 2, and 3 permitted unrestricted mesh size gillnets. District 6 commercial harvests of summer chum salmon were from fish wheels. The combined age composition of the Yukon River summer chum salmon commercial harvest in 2006 was dominated by age-0.4 fish (84.2%). Females represented 50.3% of the harvest (Table 8).

## **Summer Chum Salmon Subsistence Harvest Age and Sex Composition**

Subsistence harvest samples were collected from 112 summer chum salmon in District 1 (Table 7; Appendices B5–B7). Samples were collected from 5.5-inch and 8.5-inch mesh gillnets. Age-0.4 fish made up 93.3% of the sampled fish from 5.5-inch mesh gillnets and 100.0% of the sampled fish from 8.5-inch mesh gillnets (sample size of only 22 fish). Females made up 38.3% and 59.1% of the fish sampled from the 5.5-inch and 8.5-inch mesh gillnets, respectively. Sex was not recorded for all fish sampled.

The age composition from the combined subsistence and commercial summer chum samples ( $n=2,287$ ) from all gear types and locations was composed of 84.1% age-0.4 fish in 2006 (Table 9). This was different from the historical average (1985–2005) which was made up of 48.7% age-0.3 and 48.5% age-0.4 fish.

## **Summer Chum Salmon Test Fishery Projects Age and Sex Composition**

Samples from 860 summer chum salmon were collected at 2 test fishery project sites in the lower Yukon River (Table 7; Appendices B8–B10). Age-0.4 fish made up 72.2% of the samples collected; 59.0% of the samples were female. There was no significant difference in age compositions between male and female summer chum salmon collected in the LYTF projects (chi-square=4.8,  $df=3$ ,  $p>0.05$ ; Appendix B10).

Table 10 presents the LYTF summer chum salmon age distribution from the 5.5-inch mesh gillnet test fishery catches from 1985 through 2006. In 2006, the percentage of age-0.4 fish (72.2%) was greater compared with the historical average (49.5%) and age-0.3 fish (27.3%) was lower than the average (47.1%). Females made up 59.0% of the 2006 samples, which is the same as the historical average.

Comparing the 2006 percentages to the 5-year (2001–2005) averages, age-0.3, -0.4, -0.5 percentages were significantly different (z-tests,  $p\leq 0.01$  for each test). The 2006 5.5-inch mesh gillnet test fishery catch showed a 30.9% decrease in age-0.3 fish, a 32.3% increase in age-0.4 fish, and a 1.0% decrease in age-0.5 fish when compared to the 5-year average. There were no significant differences when comparing the age-0.2 or female percentages to the 5-year averages.

## **Summer Chum Salmon Escapement Projects Age and Sex Composition**

Samples from 2,179 summer chum salmon were collected at 4 escapement project sites in tributaries of the lower and middle Yukon River (Table 7; Appendices B11–B14). Age and sex percentages from the samples were applied to the escapement estimates. These estimates are preliminary and individual project reports by the participating agencies should be referenced for final escapement age and sex estimates. Similar to findings in other projects, age-0.4 fish

(71.1%) were the dominant age class in the escapement samples. The average percentage of females in the escapement samples was 51.3%.

### **Summer Chum Salmon Mean Length**

The mean lengths of summer chum salmon, by sex and project, are summarized in Table 11. The average mean length for males by age was: 525 mm for age 0.2, 574 mm for age 0.3, 594 mm for age 0.4, and 608 mm for age 0.5. The average mean length for females by age was: 516 mm for age 0.2, 546 mm for age 0.3, 568 mm for age 0.4, and 610 mm for age 0.5.

There were significant differences in the mean lengths (2-tailed t-tests;  $p < 0.0001$ ,  $df = 904$ ) and length distributions (K-S test;  $p < 0.0001$ ) between male and female summer chum salmon collected in the LYTF projects. Males had a mean length of 582 mm and were larger on average than females, which had a mean length of 566 mm. There were also significant differences in the mean lengths and length distributions between males and females within select age groups. Summer chum salmon age-0.3 males had a larger mean length than age-0.3 females (570 mm and 553 mm, respectively;  $p < 0.0001$ ,  $df = 232$ ; Appendix B10). Age-0.4 fish showed the same trend, with males having a larger mean length than females (588 mm and 570 mm, respectively;  $p < 0.01$ ,  $df = 619$ ; Appendix B10). Length distribution comparisons of males and females for each age group were also significant ( $p < 0.001$  for both age-0.3 and -0.4 fish).

### **FALL CHUM SALMON**

A total of 6,473 fall chum salmon were sampled for ASL data from the Yukon River drainage in 2006 (Table 7). Fall chum salmon ASL summary tables for commercial and subsistence harvests, test fisheries, and escapement sampling projects are presented in Tables 7, 8, 11, and Appendices C1–C18.

#### **Fall Chum Salmon Commercial Harvest Age and Sex Composition**

Commercial harvest samples were collected from 2,247 fall chum salmon in Districts 1, 5, and 6 (Tables 7, 8; Appendices C1–C3). All District 1 fall chum commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets by regulation. District 5 commercial harvests of fall chum salmon were from fish wheels and District 6 commercial harvests were from both gillnets and fish wheels. The combined age composition of the Yukon River fall chum salmon commercial harvest samples in 2006 was primarily made up of both age-0.3 (45.1%) and age-0.4 (52.9%) fish. Females represented 51.3% of the total.

#### **Fall Chum Salmon Subsistence Harvest Age and Sex Composition**

Subsistence fish wheel harvest samples 593 fall chum salmon were collected in Subdistricts 5-B and 6-B (Table 7; Appendix C4–C5). In Subdistrict 5-B, age-0.3 fish made up 38.6% and age-0.4 fish made up 61.4% of the subsistence sampled fish. In Subdistrict 6-B, age-0.3 fish made up 50.5% and age-0.4 fish made up 48.0% of the subsistence sampled fish. Females made up 54.7% and 59.2% of the fish sampled from Subdistricts 5-B and 6-B, respectively.

#### **Fall Chum Salmon Test Fishery Projects Age and Sex Composition**

Samples from 2,885 fall chum salmon were collected from 7 test fishery project sites in the lower, middle, upper, and Canadian portions of the Yukon River (Table 7; Appendices C6–C13). The samples were made up of 30.3% age-0.3 fish and 68.2% age-0.4 fish. Females made up 51.0% of the fish sampled during the test fishery projects.

There was no significant difference in age composition between male and female fall chum salmon collected in the LYTF projects (chi-square=0.1, df=2,  $p>0.05$ ; Appendix C8).

### **Fall Chum Salmon Escapement Projects Age and Sex Composition**

Samples from 748 fall chum salmon were collected at 5 escapement project sites in Yukon River tributaries (Table 7; Appendices C14–C18). Fall chum escapement project personnel collected vertebrae samples to determine age instead of scales, which are used in all other projects in the Yukon River drainage. Ages from vertebrae samples were 36.4% age-0.3 fish and 53.7% age-0.4 fish, similar to ages from scale samples in the other fall chum projects. Age-0.5 fish made up 6.5% of the escapement samples, which was higher than all other fall chum projects. Fish sampled during the escapement projects were composed of 57.2% females.

### **Fall Chum Salmon Mean Length**

The mean lengths of fall chum salmon, by sex and project, are summarized in Table 11. The average mean length for males by age was: 565 mm for age 0.2, 590 mm for age 0.3, 601 mm for age 0.4, and 603 mm for age 0.5. The average mean length for females by age was: 550 mm for age 0.2, 569 mm for age 0.3, 580 mm for age 0.4, and 574 mm for age 0.5.

There were significant differences in the mean lengths (2-tailed t-tests;  $p<0.0001$ , df=604) and length distributions (K-S test;  $p<0.0001$ ) between male and female fall chum salmon collected in the LYTF projects. Males had a mean length of 592 mm and were larger than females, which had a mean length of 581 mm. There were also significant differences in the mean lengths and length distributions between age-0.4 males and females. Fall chum salmon age-0.4 males had a larger mean length than age-0.4 females (605 mm and 588 mm, respectively;  $p<0.0001$ , df=350; Appendix C8). The length distribution comparison of age-0.4 males and females also detected a significant difference ( $p=0.0002$ ). There were no significant differences in the mean lengths or length distributions of age-0.3 fall chum salmon from the LYTF projects.

## **COHO SALMON**

A total of 1,360 coho salmon were sampled for ASL data from the Yukon River drainage in 2006 (Table 12). Coho salmon ASL summary tables for commercial, test fishery, and escapement sampling projects are presented in Tables 12 and 13 and Appendices D1–D7.

### **Coho Salmon Commercial Harvest Age and Sex Composition**

ASL data were collected from 992 coho salmon in the District 1 commercial harvest (Table 12; Appendix D1). All District 1 coho commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets by regulation. Age-2.1 fish made up 81.5% of the fish sampled, of which 48.2% were female.

### **Coho Salmon Test Fishery Projects Age and Sex Composition**

Samples were collected at 4 test fishery project sites from 317 coho salmon in the lower and middle Yukon River (Table 12; Appendices D2–D6). The test fishery samples were dominated by age-2.1 fish (81.2%), of which 37.6% were female.

There was a significant difference in age composition between male and female coho salmon in the LYTF projects (chi-square=6.3, df=2,  $p=0.04$ ). Males had higher percentages of age-1.1 and -3.1 fish and females had a higher percentage of age-2.1 fish (Appendix D4).



## **Coho Salmon Escapement Projects Age and Sex Composition**

Samples were collected at Otter Creek on the Nenana River from 51 coho salmon (Table 12; Appendix D7). Age-2.1 fish made up 76.5% of the samples and 49.0% were female.

## **Coho Salmon Mean Length**

The mean lengths of coho salmon are summarized by sex and project in Table 13. The average mean lengths of the age-2.1 fish for all projects combined were 552 mm for both males and females (Table 13; Appendices D1–D7).

There were no significant differences in the mean lengths (2-tailed t-tests;  $p > 0.05$ ,  $df = 140$ ) or length distributions (K-S test;  $p > 0.05$ ) between male and female coho salmon collected in the LYTF projects.

## **DISCUSSION**

ASL data have been collected from Yukon River salmon species for several decades. This information aids in fishery management decisions and allows researchers to track annual and historical changes in the age, sex, and length composition of salmon throughout the Yukon River drainage. Yukon River ASL sampling projects are designed to account for the temporal and spatial variability that exists within a salmon population but there is potential for some biases caused by small sample sizes, scale reabsorption, and sample collection method. ASL data users are cautioned to be aware of these inherent biases when interpreting these data.

Biases from small sample size, stratum, or period are sometimes unavoidable. Sufficient sample sizes were collected during most commercial periods. Small sample sizes of Chinook and summer chum salmon were collected from the only District 3 commercial period sampled, but this was a function of small harvests (Appendices A3 and B3). There were a large number of fall chum and coho salmon commercial samples collected due to the large number of commercial periods during the fall season (Appendices C1–C3 and D1). In District 1, periods 14 through 17 were not sampled due to a lack of personnel late in the season. Subsistence sampling projects with inadequate sample sizes include both the District 1 Chinook and summer chum salmon 5.5-inch and 8.5-inch gillnet projects ( $n = 142$  and  $112$ , respectively; Tables 1 and 7). Most test fishery sample sizes were adequate, with the Middle Mouth drift gillnet Chinook salmon and Eagle set gillnet fall chum projects collecting the smallest number of samples. Small sample sizes of Chinook salmon were collected at the Tozitna River weir, Sheenjek River gillnet, and Blind Creek weir projects. Sample sizes were satisfactory at all other escapement projects (Tables 1, 7, and 12). Insufficient sample sizes do exist for individual strata for some of the projects. When sample sizes are below the targeted number, care should be used when interpreting the data.

Another possible bias, due to scale reabsorption, exists in samples collected from carcasses as well as from scale samples taken on or near the spawning grounds. This potential bias is caused by the margin of the scale being reabsorbed in the last few weeks of a salmon's life as an energy reserve (Clutter and Whitesel 1956). Scale reabsorption can lead to the under aging of salmon when little evidence of the outermost annulus remains. Scale reabsorption normally becomes more pronounced the farther upriver the samples are collected. For these reasons, vertebrae are collected for aging fall chum salmon carcasses.

A bias often results from inherent size selectivity in sample collection methods. This bias is most apparent with Chinook salmon, because of the large size range, where males and younger-aged fish dominate the smaller sizes. Gillnets are size selective based on mesh size; fish wheels tend to be biased towards smaller sized fish that migrate near shore in lower water velocities (Meehan 1961). In spawning ground carcass recoveries, Kissner and Hubartt (1986) indicated Chinook salmon males tend to drift downstream while females tend to remain near their redds; and during periods of increased water velocities smaller fish have a greater potential to be carried downstream and out of the study area. Zhou (2002) also indicated that fish size and stream flow affect carcass recovery rate. This nonrandom dispersal of carcasses could bias ASL data towards females and larger older-aged fish, although proper sampling designs have been shown to reduce this (Evenson 1991; Skaugstad 1990). Many scientists believe a bias may exist in weir sampling towards smaller fish when larger fish are more reluctant, or “trap shy”, to enter a confined weir trap structure and be available for live sampling. Though trap shyness has yet to be scientifically evaluated, users of these data should be aware that this potential bias exists. Sampling biases are described in greater detail by Molyneaux et al. (2006).

### **SALMON AGE COMPOSITION**

The 2006 Yukon River escapement sampling projects had higher percentages of 4-year old Chinook salmon than most of the commercial, subsistence, and test fishery projects (Table 1). Projects that also had relatively high percentages of 4-year old fish in 2006 include those with samples collected from fish wheels and small mesh (<6-inch) gillnets, both of which have been shown to select for smaller, younger fish (Meehan 1961; Molyneaux et al. 2005). Most sampling projects in 2006 revealed above average percentages of 5-year old Chinook salmon returning to the Yukon River (Tables 3–5). An above average return of fish from the 2001 brood year in 2006, suggests that an average to above average percentage of 6-year old Chinook salmon could return to the Yukon River in 2007; the 5-year old component is also expected to be near average in 2007 (Hayes et al. 2006).

The age compositions of males and females were compared for Chinook salmon collected in the LYTF projects. The age distribution was significantly different by sex, where more of the younger fish (4 and 5 year old) were male and more of the older fish (6 and 7 year old) were female. This difference in Chinook salmon age composition is normal and has been reported from the Yukon and Kuskokwim rivers in recent reports (Bales 2007, Karpovich and DuBois 2007, Molyneaux et al. 2006).

The dominant age class for summer chum salmon in 2006 was the age-0.4 class. Samples from most projects had above average percentages of age-0.4 fish (Tables 9 and 10). In 2005, above average percentages of age-0.3 summer and fall chum salmon returned to the Yukon River (Bales 2007). Age-0.3 fall chum salmon were forecasted to again be the major contributor the run in 2006 (Bue and Hayes 2006). Age-0.3 fish were the most abundant age class for many of the fall chum salmon sampling projects, however there were high percentages of age-0.4 fall chum salmon at several projects as well (Table 7). The 2007 outlook for the fall chum run is expected to be near average, primarily made up of both age-0.3 and -0.4 fish (Bue et al. 2006).

The main age class for coho salmon collected on the Yukon River in 2006 was age 2.1 (Table 12). Age-2.1 fish are typically the most common age class of returning coho salmon (Bue and Hayes 2006).

## **SALMON SEX COMPOSITION**

Samples collected from the LYTF projects are an accurate estimate of sex composition (percent female) because these fish are sexed by examining the internal organs. LYTF Chinook salmon samples have historically been close to 50% female (Table 4), usually ranging from 45% to 60%. Samples collected from individual projects and locations can vary in sex composition, which is often related to the gear used to capture the fish and the relative proportion of smaller age-1.2 fish which are usually male. The sex composition of age-1.3 Chinook salmon is also related to gear selectivity with males typically smaller than females (Table 6). For example, at the Canadian fish wheel project, 358 of 435 (82%) age-1.3 Chinook salmon were male and only 25.9% of the total were female (Table 1; Appendix A22). This relatively low percentage of females is likely attributable to samples collected from fish wheels, which select for smaller, typically male fish (Meehan 1961). Low percentages of females can also be expected when using small mesh (<6-inch) gillnets (Molyneaux et al. 2005). This was observed in the variable (both large and small) mesh gillnet test fishery samples from Pilot Station and Eagle sonars, which had relatively low percentages (36.4% and 38.2%, respectively) of females compared to projects that only fished large ( $\geq 8$ -inch) mesh nets (Table 1). Some of the escapement projects with above average percentages of returning age-1.2 Chinook salmon also had relatively low percentages of females (e.g., the Gisasa and Tozitna rivers; Appendices A26 and A28).

Samples from most summer and fall chum salmon projects had female percentages near 50% (usually 40% to 60% female; Table 7). Summer chum salmon sampled from the District 3 commercial harvest were the most extreme outlier with only 20.7% of the samples being female, although the sample size was only 58 fish.

Coho salmon samples also revealed female percentages near 50% for most projects (Table 12). Kaltag test fishery samples were the major outlier with a female percentage of 18.5%, although this may be influenced by small sample size ( $n=27$ ).

## **SALMON LENGTH COMPOSITION**

The size of Chinook salmon returning to the Yukon River has been a growing concern. Many fishers and researchers suggest fewer “large” Chinook salmon are returning than in the past. The Salmon Size Subcommittee of the US/Canada Yukon River Joint Technical Committee was formed in 2006 in response to these concerns. The Subcommittee was tasked with reviewing the existing information and literature and advising the Committee, with respect to changes in Chinook salmon age, sex, and size composition (JTC 2006b). As summarized by the Subcommittee, existing analyses document a decrease in the weight of commercial harvests (Bigler et al. 1996), a reduction in the prevalence of the largest fish (Hyer and Schleusner 2005), and the apparent near disappearance of age-8 fish (JTC 2006b). In 2006, most projects had below average percentages of the older, typically larger age classes of Chinook salmon and no projects had any age-8 fish sampled (Tables 1 and 3–5). It is difficult to determine with certainty whether the changes observed within Yukon River Chinook salmon have resulted from environmental or fishery-induced selective pressures, or a combination of both (JTC 2006b). In an effort to collect more information on the size of Chinook salmon, CFD began collecting weight and girth data, in addition to age, sex, and length, at the LYTF projects in 2006 and will be continuing this work in 2007. A gillnet mesh size selectivity study is also being conducted in Emmonak during 2007. This project will examine the use of different mesh sized gillnets and the size of fish being harvested.

The lack of “large” fish has not been a concern with Yukon River chum and coho salmon populations.

The mean lengths of males and females were compared for all species of salmon collected in the LYTF projects. Chinook salmon males were smaller on average than females, which is consistent with recent analyses performed on Yukon River Chinook salmon. Karpovich and DuBois (2007) found that males were smaller than females with the exception of the 1.5 age class. This trend was observed in 2006, however the sample size for age-1.5 fish was small (n=20) and, although the mean length of males was larger than the mean length of females (906 mm and 871 mm, respectively), no significant difference was detected. Molyneaux et al. (2006) also reported male Chinook salmon having a smaller mean length than females on the Kuskokwim River.

Summer and fall chum salmon length comparisons of males and females showed a trend opposite that of Chinook salmon. Males were found to be larger on average than females for both summer and fall chum, which is consistent with findings by Karpovich and DuBois (2007). Molyneaux et al. (2006) also reported the average lengths of females were generally less than males of the same age class for chum salmon on the Kuskokwim River.

There was no significant difference in the mean lengths of male and female coho salmon in 2006, which is also consistent with findings by Karpovich and DuBois (2007).

#### **CHINOOK SALMON WEIGHT AND GIRTH COMPOSITION**

Chinook salmon weight and girth measurements were taken in the LYTF projects to provide additional information on the size of Chinook salmon returning to the Yukon River. Similar to the length results, male Chinook salmon were lighter and had smaller girths on average compared to females, with the exception of age-1.5 fish (n=6 males and 12 females; caution should be used when interpreting these results). In a 2005 study on the Yukon River using linear regression to examine the length-girth relationship of Chinook salmon, Jasper and Evenson (2006) found that male Chinook salmon had a smaller girth than females at both the Pilot Station and Eagle sonar projects. They reported a 12-mm difference in girth between males and females at Pilot Station sonar and a 63-mm difference at Eagle sonar. In 2006, the difference in mean girth between males and females in the LYTF projects was 39 mm. Jasper and Evenson (2006) did not detect a difference when comparing the length-weight relationship of males to females. Weight and girth data will again be collected from Chinook salmon in the LYTF projects in 2007.

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## **TABLES AND FIGURES**

**Table 1.**–Yukon River Chinook salmon age and female percentages from commercial, subsistence, test fishery, and escapement projects, 2006.

Project Type Location and (gear)	Sample Size	Percent (%)											Female
		Brood Year (Age)											
		2003 (1.1)	2002 (1.2)	2001 (1.3)	2000 (2.2)	2000 (1.4)	2000 (2.3)	1999 (1.5)	1999 (2.4)	1998 (1.6)	1998 (2.5)		
Commercial													
District 1 (Unrestricted mesh gillnet)	1,788	0.0	1.8	46.8	0.0	49.8	0.0	1.6	0.1	0.0	0.0	54.9	
District 2 (Unrestricted mesh gillnet <sup>a</sup> )	1,462	0.0	1.8	53.2	0.0	43.7	0.3	1.0	0.0	0.0	0.0	40.6	
District 3 (Unrestricted mesh gillnet)	101	0.0	2.0	52.5	0.0	41.6	1.0	2.0	1.0	0.0	0.0	35.6	
District 5 (gillnet and fish wheel)	449	0.0	10.2	67.9	0.0	21.1	0.0	0.4	0.4	0.0	0.0	38.6	
Subsistence													
District 1 (5.5-inch mesh gillnet)	14	0.0	28.6	64.3	0.0	7.1	0.0	0.0	0.0	0.0	0.0	-	
District 1 (8.5-inch mesh gillnet)	128	0.0	2.3	53.1	0.0	42.2	0.0	2.3	0.0	0.0	0.0	42.3 <sup>b</sup>	
Subdistrict 4-A, Kaltag (8.5-inch mesh gilln	211	0.0	7.1	52.6	0.0	39.3	0.0	1.0	0.0	0.0	0.0	68.2	
Subdistrict 4-A, Nulato (gillnet)	113	0.0	8.8	45.1	0.0	43.4	0.0	1.8	0.9	0.0	0.0	61.9	
Subdistricts 4-A, Koyukuk (gillnet)	46	0.0	8.7	56.5	0.0	32.6	0.0	2.2	0.0	0.0	0.0	21.7	
Subdistricts 4-B, 4-C Bishop Rock (gillnet)	180	0.0	2.8	50.6	0.0	38.3	1.7	3.3	3.3	0.0	0.0	51.1	
Subdistricts 4-B, 4-C Ruby (gillnet)	79	0.0	11.4	46.8	0.0	40.5	1.3	0.0	0.0	0.0	0.0	36.7	
Test Fishery													
Big Eddy (8.5-inch mesh set gillnet)	490	0.0	2.7	51.2	0.0	43.9	0.2	1.6	0.4	0.0	0.0	49.2	
Middle Mouth (8.5-inch mesh set gillnet)	497	0.0	1.8	49.9	0.0	45.7	0.2	2.0	0.4	0.0	0.0	47.9	
Big Eddy (8.25-inch mesh drift gillnet)	93	0.0	2.2	38.7	0.0	55.9	0.0	2.2	1.1	0.0	0.0	54.8	
Middle Mouth (8.25-inch mesh drift gillnet	37	0.0	0.0	32.4	0.0	67.6	0.0	0.0	0.0	0.0	0.0	62.2	
Marshall (8.25-inch mesh drift gillnet)	309	0.0	0.3	52.2	0.0	47.2	0.3	0.0	0.0	0.0	0.0	53.2	
Pilot Station (2.75 to 8.5-inch mesh gillnet)	505	0.0	5.5	58.0	0.0	35.4	0.6	0.4	0.0	0.0	0.0	36.4	
Eagle Sonar (2.75 to 7.5-inch mesh gillnet)	254	0.0	16.9	60.2	0.0	20.9	1.6	0.0	0.4	0.0	0.0	38.2	
Canada (fish wheel)	735	0.0	20.3	59.2	0.3	20.0	0.0	0.3	0.0	0.0	0.0	25.9	
Escapement													
Andreafsky River, East Fork (weir trap)	454	0.0	17.0	54.9	0.0	28.1	0.0	0.0	0.0	0.0	0.0	42.6	
Anvik River (carcass, hand-picked)	169	0.0	10.7	47.9	0.0	41.4	0.0	0.0	0.0	0.0	0.0	43.2	
Chena River (carcass, hand-picked)	362	0.0	12.7	45.3	0.3	40.3	0.3	1.1	0.0	0.0	0.0	45.9	
Gisasa River (weir trap)	530	0.1	18.9	67.2	0.0	13.0	0.6	0.1	0.1	0.0	0.0	28.2	
Salcha River (carcass, hand-picked)	509	0.0	5.7	49.3	0.0	42.8	0.2	2.0	0.0	0.0	0.0	43.4	
Tozitna River (weir trap)	69	0.0	13.0	82.6	0.0	4.4	0.0	0.0	0.0	0.0	0.0	11.6	
Sheenjek River (8.0-inch mesh drift gillnet)	35	0.0	8.6	77.1	0.0	14.3	0.0	0.0	0.0	0.0	0.0	37.1	
Blind Creek, Canada (weir trap)	36	0.0	2.8	66.7	2.8	27.8	0.0	0.0	0.0	0.0	0.0	38.9	
Big Salmon River, Canada (carcass)	180	0.0	6.7	40.0	0.0	50.0	0.0	2.2	1.1	0.0	0.0	54.4	
Total Chinook	9,835												

<sup>a</sup> Gillnet mesh size was restricted to 6-inch or less during the second commercial fishing period and unrestricted during all other periods.

<sup>b</sup> Sex was determined for 74 of 128 aged fish.



**Table 2.**–Yukon River Districts 1, 2, 3, and 5 Chinook salmon commercial harvest age and sex composition, 2006.

Brood Year (Age)																						
			2003		2002		2001		2000				1999				1998				Total	
Sample			(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6) (2.5)			
District	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1 <sup>a</sup>	1,788	Males	0	0.0	423	1.7	7,209	29.4	0	0.0	3,308	13.5	0	0.0	122	0.5	0	0.0	0	0.0	11,062	45.1
		Females	0	0.0	19	0.1	4,270	17.4	0	0.0	8,908	36.3	5	0.0	261	1.1	20	0.1	0	0.0	13,483	54.9
		Subtotal	0	0.0	442	1.8	11,479	46.8	0	0.0	12,216	49.8	5	0.0	382	1.6	20	0.1	0	0.0	24,545	100.0
2 <sup>b</sup>	1,462	Males	0	0.0	362	1.8	7,576	38.2	0	0.0	3,724	18.8	54	0.3	71	0.4	0	0.0	0	0.0	11,786	59.4
		Females	0	0.0	0	0.0	2,968	15.0	0	0.0	4,948	24.9	0	0.0	131	0.7	0	0.0	0	0.0	8,048	40.6
		Subtotal	0	0.0	362	1.8	10,544	53.2	0	0.0	8,672	43.7	54	0.3	202	1.0	0	0.0	0	0.0	19,834	100.0
3	101	Males	0	0.0	6	2.0	122	38.6	0	0.0	65	20.8	3	1.0	3	1.0	3	1.0	0	0.0	0	0.0
		Females	0	0.0	0	0.0	44	13.9	0	0.0	65	20.8	0	0.0	3	1.0	0	0.0	0	0.0	112	35.6
		Subtotal	0	0.0	6	2.0	165	52.5	0	0.0	131	41.6	3	1.0	6	2.0	3	1.0	0	0.0	315	100.0
5 <sup>c</sup>	449	Males	0	0.0	131	7.1	887	48.2	0	0.0	111	6.1	0	0.0	0	0.0	0	0.0	0	0.0	1,130	61.4
		Females	0	0.0	57	3.1	361	19.6	0	0.0	276	15.0	0	0.0	8	0.4	7	0.4	0	0.0	0	0.0
		Subtotal	0	0.0	188	10.2	1,248	67.9	0	0.0	387	21.1	0	0.0	8	0.4	7	0.4	0	0.0	1,839	100.0
All Districts	3,800	Males	0	0.0	923	2.0	15,794	33.9	0	0.0	7,208	15.5	57	0.1	196	0.4	3	0.0	0	0.0	24,181	52.0
		Females	0	0.0	76	0.2	7,643	16.4	0	0.0	14,198	30.5	5	0.0	403	0.9	27	0.1	0	0.0	22,352	48.0
		Total	0	0.0	999	2.1	23,437	50.4	0	0.0	21,406	46.0	62	0.1	599	1.3	31	0.1	0	0.0	46,533	100.0

<sup>a</sup> Commercial fishing periods were unrestricted. 8.0-inch and larger mesh gillnets were likely used because it was a Chinook directed fishery.

<sup>b</sup> Gillnet mesh size was restricted to 6-inch or less during the second commercial fishing period and unrestricted during all other periods.

<sup>c</sup> Commercial fishing gear included gillnets and fish wheels.

**Table 3.**—Yukon River District 1 Chinook salmon age and female percentages from commercial harvests using 8.0-inch or larger mesh gillnets, 1985–2006.

Year <sup>a</sup>	Sample Size	Percent (%)						Female	Total Catch
		Age							
		3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)		
1985	576	0.0	1.4	6.6	80.3	11.4	0.4	57.8	75,944
1986	1,279	0.0	1.1	26.5	45.8	26.4	0.2	47.9	43,644
1987	1,436	0.0	1.2	5.6	79.9	12.9	0.6	55.3	62,148
1988	1,022	0.0	3.2	18.6	41.5	35.2	1.5	46.2	32,782
1989	982	0.0	0.8	27.0	59.0	11.8	1.3	48.6	32,180
1990	1,537	0.0	7.2	21.5	62.7	8.4	0.1	50.3	42,092
1991	1,532	0.0	1.3	39.4	50.0	9.0	0.2	47.0	52,074
1992	1,354	0.0	2.3	12.0	81.5	4.3	0.0	55.5	54,569
1993	1,673	0.0	4.5	21.2	64.9	9.5	0.0	49.2	47,084
1994	1,392	0.0	1.8	44.3	49.2	4.8	0.0	52.4	61,633
1995	1,884	0.0	3.0	11.3	81.4	4.3	0.1	50.1	74,827
1996	2,093	0.1	1.1	36.3	38.1	24.1	0.2	52.2	56,638
1997	1,881	0.0	4.0	10.9	83.3	1.8	0.0	47.2	63,062
1998	1,311	0.0	3.6	53.9	34.9	7.6	0.0	41.8	24,135
1999	1,857	0.0	2.1	14.8	81.4	1.7	0.0	43.6	37,145
2000	721	0.0	1.2	27.9	63.7	7.3	0.0	57.6	4,735
2001 <sup>b</sup>	-	-	-	-	-	-	-	-	-
2002	1,133	0.0	3.8	20.2	63.1	13.0	0.0	54.9	11,081
2003	1,405	0.0	0.5	26.1	65.4	7.9	0.1	53.3	22,710
2004	2,427	0.0	6.2	18.7	71.1	3.9	0.0	54.1	29,038
2005	1,410	0.0	1.7	42.4	51.8	4.2	0.0	59.7	16,927
2006	1,788	0.0	1.8	46.8	49.8	1.6	0.0	54.9	24,545
Average <sup>c</sup> (1985-2005)	1,445	0.0	2.6	24.3	62.4	10.5	0.2	51.2	42,222
10-yr avg. <sup>c</sup> (1996-2005)	1,582	0.0	2.7	27.9	61.4	7.9	0.0	51.6	29,497
5-yr avg. <sup>c</sup> (2001-2005)	1,594	0.0	3.0	26.9	62.8	7.3	0.0	55.5	19,939

-continued-

**Table 3.**–Page 2 of 2.

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- <sup>a</sup> District 1 commercial gillnet harvests using 8.0-inch or larger mesh size include periods with both restricted and unrestricted mesh sizes. Prior to 2000, commercial fishing periods with restricted gillnet mesh size permitted  $\leq 6.0$ -inch mesh; after 2000, restricted mesh gillnet periods permitted  $\geq 8.0$ -inch mesh gillnets. Also, after 2000, the summer chum market declined and the fishery was directed towards Chinook salmon, therefore  $\geq 8.0$ -inch mesh gillnets were likely used during unrestricted periods.
- <sup>b</sup> No commercial fishing occurred in 2001.
- <sup>c</sup> Averages were not weighted by number of fish sampled each year.

**Table 4.**–Yukon River Chinook salmon age and female percentages from the combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet test fishery catches, 1985–2006.

Year	Sample Size	Number of Days <sup>a</sup>	Percent (%)						Female
			Age						
			3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)	
1985	309	18	0.0	3.9	8.4	79.3	8.1	0.3	53.7
1986	533	25	0.3	0.9	22.7	52.9	23.1	0.2	46.3
1987	465	20	0.3	0.9	3.0	78.5	17.0	0.4	62.8
1988	262	30	0.0	2.3	15.3	43.9	37.8	0.8	56.1
1989	381	29	0.0	0.8	17.8	67.2	13.9	0.5	53.0
1990	227	23	0.0	3.5	11.0	76.7	8.8	0.0	56.4
1991	356	27	0.0	1.4	42.1	48.9	7.0	0.6	49.2
1992	359	19	0.0	1.1	10.6	82.7	5.0	0.6	56.5
1993	472	25	0.0	0.8	25.8	63.8	9.3	0.2	50.8
1994	653	41	0.2	1.4	41.3	51.8	5.5	0.0	47.3
1995	445	19	0.0	0.9	11.2	81.6	6.3	0.0	50.8
1996	355	13	0.0	1.1	61.4	21.4	16.3	0.0	53.0
1997	302	12	0.0	1.7	9.6	86.4	2.6	0.0	51.3
1998	928	39	0.0	1.3	43.4	45.3	9.9	0.1	50.2
1999	942	35	0.0	0.7	9.1	87.0	3.1	0.0	61.4
2000	950	42	0.2	0.7	19.2	71.1	9.1	0.0	53.4
2001	1,020	37	0.0	0.5	11.0	80.6	8.0	0.0	56.9
2002	1,050	43	0.0	2.5	20.5	64.9	12.1	0.0	52.2
2003	1,400	50	0.0	0.6	24.1	68.0	7.3	0.1	52.5
2004	865	48	0.1	4.3	18.5	74.5	2.7	0.0	58.2
2005	994	43	0.0	1.5	40.9	55.0	2.5	0.0	48.9
2006	987	38	0.0	2.2	50.6	45.0	2.2	0.0	48.5
Average <sup>b</sup> (1994, 1998-2005)	978	42	0.1	1.5	25.3	66.4	6.7	0.0	53.4
5-yr average <sup>b</sup> (2001-2005)	1,066	44	0.0	1.9	23.0	68.6	6.5	0.0	53.7

<sup>a</sup> The Big Eddy and Middle Mouth 8.5" set gillnet test fisheries were conducted from the end of May through July 15. Before 1998, these test fisheries were often discontinuous or were not conducted throughout the season. The "Number of Days" refers only to those days that scale samples were collected from Chinook salmon and aged.

<sup>b</sup> The averages only include years when samples were collected throughout the season and include samples with a 35 day season minimum. Averages were not weighted by number of fish sampled each year.

**Table 5.**—Yukon River Chinook salmon age and female percentages from selected escapement projects, 1985–2006.

Project	Year	Percent (%)						Females
		Age						
		3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)	
Andreafsky River, East Fork	1985 <sup>a</sup>	0.0	39.6	12.8	43.6	4.0	0.0	33.2
	1986 <sup>b</sup>	0.0	2.2	69.8	21.8	6.2	0.0	23.3
	1987 <sup>b</sup>	0.3	4.7	8.9	83.7	2.4	0.0	56.1
	1988 <sup>b</sup>	0.2	27.8	29.5	26.8	15.6	0.0	38.7
	1989	0.0	5.3	71.8	21.2	1.7	0.0	13.6
	1990	0.6	31.8	28.7	37.9	0.9	0.0	41.6
	1991	0.0	10.3	56.9	30.5	2.3	0.0	33.9
	1992	0.0	23.1	48.1	25.0	3.8	0.0	21.2
	1993	0.4	16.9	38.7	41.8	2.3	0.0	29.9
	1994 <sup>c</sup>	0.0	8.0	53.0	34.5	4.3	0.2	35.5
	1995 <sup>c</sup>	0.0	35.0	15.7	47.5	1.7	0.0	43.7
	1996 <sup>c</sup>	1.2	6.6	74.1	13.9	4.2	0.0	41.9
	1997 <sup>c</sup>	0.0	52.7	15.6	31.7	0.0	0.0	36.8
	1998 <sup>c</sup>	0.0	16.8	71.4	11.1	0.8	0.0	29.0
	1999 <sup>c</sup>	0.3	34.5	32.2	32.5	0.6	0.0	28.6
	2000 <sup>c</sup>	0.0	12.6	49.1	38.3	0.0	0.0	54.3
	2001 <sup>c</sup>	0.0	14.5	18.5	64.5	2.4	0.0	63.7
	2002 <sup>c</sup>	0.0	30.5	48.2	20.0	1.4	0.0	21.1
	2003 <sup>c</sup>	0.5	16.0	51.9	30.7	0.8	0.0	46.2
	2004 <sup>c</sup>	0.0	39.9	42.6	17.1	0.4	0.0	37.3
	2005 <sup>c</sup>	0.0	15.0	64.3	20.2	0.5	0.0	50.2
	2006 <sup>c</sup>	0.0	17.0	54.9	28.1	0.0	0.0	42.6
Average <sup>d</sup> (1985-2005)		0.2	21.1	42.9	33.1	2.7	0.0	37.1
5-yr avg. <sup>d</sup> (2001-2005)		0.1	23.2	45.1	30.5	1.1	0.0	43.7
Anvik River	1985 <sup>a</sup>	0.0	30.3	39.4	30.3	0.0	0.0	24.2
	1986 <sup>a</sup>	0.0	0.7	50.0	38.0	11.3	0.0	67.2
	1987 <sup>a</sup>	0.0	9.5	13.1	73.9	3.7	0.0	58.7
	1988 <sup>a</sup>	0.0	30.5	38.2	27.2	4.1	0.0	29.7
	1989 <sup>a</sup>	0.3	4.2	49.1	43.5	2.9	0.0	40.7
	1990 <sup>a</sup>	0.3	26.3	26.0	43.8	3.8	0.0	37.0
	1991 <sup>a</sup>	0.0	10.3	55.0	31.7	2.9	0.0	41.0
	1992 <sup>a</sup>	0.0	9.5	38.1	50.8	1.6	0.0	41.3
	1993 <sup>a</sup>	0.0	13.8	38.5	45.6	2.1	0.0	42.1
	1994 <sup>a</sup>	0.0	3.0	51.9	39.8	5.4	0.0	42.0
	1995 <sup>a</sup>	0.0	9.5	38.1	50.8	1.6	0.0	41.3
	1996 <sup>a</sup>	0.0	9.9	55.4	24.4	9.9	0.4	35.1
	1997 <sup>a</sup>	0.0	25.0	30.6	44.1	0.3	0.0	36.8
	1998 <sup>a</sup>	0.3	14.7	59.9	23.9	1.2	0.0	32.7
	1999 <sup>a</sup>	0.0	9.3	42.5	48.1	0.0	0.0	37.9
	2000 <sup>a</sup>	0.0	4.9	41.9	52.7	0.5	0.0	40.9
	2001 <sup>a</sup>	0.0	11.1	30.1	53.0	5.7	0.0	38.3
	2002 <sup>a</sup>	0.0	19.5	43.1	34.2	3.2	0.0	28.8
	2003 <sup>a</sup>	0.2	8.9	54.7	33.2	3.0	0.0	37.6
	2004 <sup>a</sup>	0.6	32.2	40.7	25.6	0.9	0.0	27.6
	2005 <sup>a</sup>	0.0	8.8	61.2	27.7	2.2	0.0	51.1
	2006 <sup>a</sup>	0.0	10.7	47.9	41.4	0.0	0.0	43.2
Average <sup>d</sup> (1985-2005)		0.1	13.9	42.7	40.1	3.2	0.0	40.2
5-yr avg. <sup>d</sup> (2001-2005)		0.2	16.1	46.0	34.7	3.0	0.0	39.0

-continued-

**Table 5.**—Page 2 of 3.

		Percent (%)						
		Age						
Project	Year	3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)	Females
Chena River	1985 <sup>e</sup>	0.0	12.1	21.7	59.2	7.0	0.0	52.5
	1986 <sup>e</sup>	0.1	9.3	51.2	29.9	9.3	0.1	25.4
	1987 <sup>e</sup>	0.0	2.9	13.1	75.6	8.4	0.0	58.0
	1988 <sup>e</sup>	0.6	10.5	17.5	46.4	24.6	0.4	60.9
	1989 <sup>e</sup>	0.3	4.2	30.2	54.9	10.4	0.0	64.9
	1990 <sup>e</sup>	0.0	23.8	25.7	46.7	3.8	0.0	46.2
	1991 <sup>e</sup>	0.0	8.3	55.8	28.5	7.4	0.0	31.5
	1992 <sup>e</sup>	1.9	40.7	16.4	40.5	0.4	0.0	37.7
	1993 <sup>b</sup>	0.5	29.4	41.2	27.8	1.1	0.0	16.6
	1994 <sup>b</sup>	0.0	2.9	43.6	51.2	2.3	0.0	45.1
	1995 <sup>b</sup>	0.0	4.4	20.9	70.9	3.8	0.0	66.0
	1996 <sup>b</sup>	2.1	6.2	44.2	23.5	23.9	0.0	44.0
	1997 <sup>b</sup>	0.3	37.2	13.4	48.0	1.1	0.0	39.6
	1998 <sup>b</sup>	0.0	4.4	72.4	18.4	4.8	0.0	41.2
	1999 <sup>b</sup>	0.9	7.9	25.2	65.4	0.6	0.0	58.8
	2000 <sup>b</sup>	0.0	20.1	35.6	35.6	8.7	0.0	34.9
	2001 <sup>b</sup>	0.6	9.6	33.6	51.2	5.0	0.0	44.0
	2002 <sup>b</sup>	0.1	29.0	29.8	38.5	2.7	0.0	31.7
	2003 <sup>b</sup>	0.0	5.1	46.5	41.6	6.8	0.0	44.9
	2004 <sup>b</sup>	0.0	8.9	17.7	71.5	1.9	0.0	66.5
	2005 <sup>b</sup>	0.0	6.5	49.9	39.5	4.1	0.0	42.4
	2006 <sup>b</sup>	0.0	12.7	45.6	40.6	1.1	0.0	45.9
Average <sup>d</sup> (1985-2005)		0.4	13.5	33.6	45.9	6.6	0.0	45.4
5-yr avg. <sup>d</sup> (2001-2005)		0.1	11.8	35.5	48.5	4.1	0.0	45.9
Salcha River	1985 <sup>e</sup>	0.0	12.3	17.6	64.8	5.3	0.0	48.5
	1986 <sup>e</sup>	0.2	11.8	43.7	29.5	14.8	0.0	35.8
	1987 <sup>e</sup>	0.2	6.0	12.6	73.5	7.8	0.0	62.8
	1988 <sup>e</sup>	0.4	20.3	22.5	42.1	14.7	0.0	39.6
	1989 <sup>e</sup>	0.5	4.1	28.9	57.8	8.8	0.0	62.2
	1990 <sup>e</sup>	0.2	17.6	24.9	48.9	8.3	0.0	48.9
	1991 <sup>e</sup>	0.2	8.2	44.3	41.4	5.8	0.2	47.2
	1992 <sup>e</sup>	1.2	30.8	28.6	38.2	1.1	0.0	34.4
	1993 <sup>b</sup>	0.9	28.0	39.1	31.1	0.9	0.0	27.6
	1994 <sup>b</sup>	0.6	2.7	39.1	52.9	4.8	0.0	44.5
	1995 <sup>b</sup>	0.0	13.6	20.6	62.8	3.1	0.0	56.0
	1996 <sup>b</sup>	2.7	6.2	38.4	28.6	24.1	0.0	50.8
	1997 <sup>b</sup>	0.0	14.4	14.4	69.4	1.7	0.0	50.0
	1998 <sup>b</sup>	2.4	4.9	72.4	17.9	2.4	0.0	30.0
	1999 <sup>b</sup>	0.0	9.1	24.1	66.4	0.3	0.0	54.7
	2000 <sup>b</sup>	0.0	22.0	48.8	24.4	4.9	0.0	43.9
	2001 <sup>b</sup>	0.5	10.4	33.9	52.1	3.1	0.0	37.5
	2002 <sup>b</sup>	0.0	36.2	13.8	38.7	11.3	0.0	34.8
	2003 <sup>b</sup>	0.7	7.3	42.4	42.4	7.3	0.0	42.4
	2004 <sup>b</sup>	0.0	9.2	8.3	81.7	0.9	0.0	62.9
	2005 <sup>b</sup>	0.0	9.3	41.5	46.2	3.0	0.0	54.3
	2006 <sup>b</sup>	0.0	5.7	49.3	43.0	2.0	0.0	43.4
Average <sup>d</sup> (1985-2005)		0.5	13.5	31.4	48.1	6.4	0.0	46.1
5-yr avg. <sup>d</sup> (2001-2005)		0.2	14.5	28.0	52.2	5.1	0.0	46.4

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**Table 5.**—Page 3 of 3.

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- <sup>a</sup> Estimates were from sonar counts.
- <sup>b</sup> Estimates were from tower counts.
- <sup>c</sup> Estimates were from weir counts.
- <sup>d</sup> Averages were not weighted by number of fish sampled each year.
- <sup>e</sup> Estimates were from mark-recapture project.

**Table 6.**—Yukon River Chinook salmon mean lengths (mm) by project, gear, sex, and age, 2006.

Sex	Project Location	Project Type and (Gear) <sup>a</sup>	Brood Year (Age)									
			2003 (1.1)	2002 (1.2)	2001 (1.3)	2000 (2.2)	2000 (1.4)	2000 (2.3)	1999 (1.5)	1999 (2.4)	1998 (1.6)	1998 (2.5)
Male	District 1	Com (GN)	-	596	771	-	859	-	920	-	-	-
	District 2	Com (GN)	-	577	760	-	852	683	874	-	-	-
	District 3	Com (GN)	-	568	750	-	865	715	990	900	-	-
	District 5	Com (FW, GN)	-	590	704	-	739	-	-	-	-	-
	District 1	Sub (8.5-inch GN)	-	-	770	-	852	-	1020	-	-	-
	Subdistrict 4-A, Kaltag	Sub (8.5-inch GN)	-	569	718	-	818	-	-	-	-	-
	Subdistrict 4-A, Nulato	Sub (GN)	-	541	778	-	871	-	1080	-	-	-
	Subdistricts 4-A, Koyukuk	Sub (GN)	-	581	719	-	868	-	900	-	-	-
	Subdistricts 4-B, 4-C Bishop Rock	Sub (GN)	-	550	767	-	831	848	-	923	-	-
	Subdistricts 4-C, Ruby	Sub (GN)	-	592	719	-	816	750	-	-	-	-
	Big Eddy	TF (8.5-inch SGN)	-	577	772	-	848	700	953	-	-	-
	Middle Mouth	TF (8.5-inch SGN)	-	573	769	-	838	830	870	880	-	-
	Big Eddy	TF (8.25-inch DGN)	-	573	758	-	842	-	-	-	-	-
	Middle Mouth	TF (8.25-inch DGN)	-	-	772	-	799	-	-	-	-	-
	Marshall	TF (8.25-inch DGN)	-	585	761	-	864	710	-	-	-	-
	Pilot Station	TF (DGN)	-	553	726	-	814	733	950	-	-	-
	Eagle Sonar	TF (DGN)	-	594	734	-	868	608	-	-	-	-
	Andreafsky, E.F.	Esc (WR)	-	563	708	-	797	-	-	-	-	-
	Anvik	Esc (CR)	-	536	666	-	765	-	-	-	-	-
	Chena	Esc (CR)	-	566	723	550	854	750	908	-	-	-
	Gisasa	Esc (WR)	-	564	696	-	795	680	560	-	-	-
	Salcha	Esc (CR)	-	557	709	-	828	-	930	-	-	-
	Tozitna	Esc (WR)	-	548	684	-	750	-	-	-	-	-
Male Average <sup>b</sup>			-	569	736	550	828	728	913	901	-	-

-continued-



**Table 6.**—Page 2 of 2.

Sex	Project Location	Project Type and (Gear) <sup>a</sup>	Brood Year (Age)									
			2003 (1.1)	2002 (1.2)	2001 (1.3)	2000 (2.2)	2000 (1.4)	2000 (2.3)	1999 (1.5)	1999 (2.4)	1998 (1.6)	1998 (2.5)
Female	District 1	Com (GN)	-	670	803	-	863	875	913	810	-	-
	District 2	Com (GN)	-	580	786	-	854	850	881	-	-	-
	District 3	Com (GN)	-	-	780	-	869	-	960	-	-	-
	District 5	Com (FW, GN)	-	592	727	-	842	-	960	785	-	-
	District 1	Sub (8.5-inch GN)	-	-	775	-	858	-	-	-	-	-
	Subdistrict 4-A, Kaltag	Sub (8.5-inch GN)	-	565	771	-	844	-	897	-	-	-
	Subdistrict 4-A, Nulato	Sub (GN)	-	627	758	-	847	-	750	885	-	-
	Subdistricts 4-A, Koyukuk	Sub (GN)	-	-	805	-	901	-	-	-	-	-
	Subdistricts 4-B, 4-C Bishop Rock	Sub (GN)	-	-	818	-	875	-	918	834	-	-
	Subdistricts 4-C, Ruby	Sub (GN)	-	595	848	-	847	-	-	-	-	-
	Big Eddy	TF (8.5-inch SGN)	-	-	819	-	862	-	901	845	-	-
	Middle Mouth	TF (8.5-inch SGN)	-	-	811	-	855	-	838	910	-	-
	Big Eddy	TF (8.25-inch DGN)	-	-	783	-	846	-	893	805	-	-
	Middle Mouth	TF (8.25-inch DGN)	-	-	795	-	855	-	-	-	-	-
	Marshall	TF (8.25-inch DGN)	-	-	824	-	865	-	-	-	-	-
	Pilot Station	TF (DGN)	-	573	739	-	820	701	900	-	-	-
	Eagle Sonar	TF (DGN)	-	623	754	-	834	758	-	830	-	-
	Andreafsky, E.F.	Esc (WR)	-	588	740	-	827	-	-	-	-	-
	Anvik	Esc (CR)	-	-	714	-	800	-	-	-	-	-
	Chena	Esc (CR)	-	-	789	-	862	-	860	-	-	-
	Gisasa	Esc (WR)	390	519	716	-	838	820	840	790	-	-
	Salcha	Esc (CR)	-	-	803	-	869	625	936	-	-	-
	Tozitna	Esc (WR)	-	-	740	-	870	-	-	-	-	-
Female Average <sup>b</sup>			390	593	778	-	852	772	889	833	-	-

<sup>a</sup> Com is commercial, Sub is subsistence, TF is test fishery, Esc is escapement, GN is gillnet preceded by mesh size, SGN is set gillnet, DGN is drift gillnet, FW is fish wheel, WR is weir, SN is seine net, and CR is carcass.

<sup>b</sup> Averages were not weighted by number of fish sampled from each project.

**Table 7.**–Yukon River chum salmon age and female percentages from commercial, subsistence, test fishery, and escapement projects, 2006.

Project Type Location and (gear)	Sample Size	Percent (%)					
		Age					Female
		0.2	0.3	0.4	0.5	0.6	
Commercial - Summer Chum							
District 1 (unrestricted gillnet)	734	0.2	21.8	77.8	0.2	0.0	45.8
District 2 (unrestricted gillnet <sup>a</sup> )	473	0.0	19.7	79.9	0.4	0.0	42.4
District 3 (unrestricted gillnet)	58	0.0	13.8	86.2	0.0	0.0	20.7
District 6 (fish wheel)	674	0.0	10.2	89.8	0.0	0.0	57.1
Commercial - Fall Chum							
District 1 (≤ 6-inch gillnet)	1,404	1.9	42.0	56.1	0.1	0.0	51.9
District 5 (fish wheel)	547	3.2	50.7	46.1	0.0	0.0	48.8
District 6 (gillnet and fish wheel)	296	1.2	56.5	42.3	0.0	0.0	49.8
Subsistence - Summer Chum							
District 1 (5.5-inch gillnet)	90	0.0	6.7	93.3	0.0	0.0	38.3 <sup>b</sup>
District 1 (8.5-inch gillnet)	22	0.0	0.0	100.0	0.0	0.0	59.1
Subsistence - Fall Chum							
Subdistrict 5-B (fish wheel)	316	0.0	38.6	61.4	0.0	0.0	54.7
Subdistrict 6-B (fish wheel)	277	1.4	50.5	48.0	0.0	0.0	59.2
Test Fishery - Summer Chum							
Big Eddy (5.5-inch drift gillnet)	635	0.0	25.4	74.5	0.2	0.0	56.4
Middle Mouth (5.5-inch drift gillnet)	225	1.3	32.9	65.8	0.0	0.0	66.2
Test Fishery Summer Chum Average <sup>c</sup>		0.7	29.1	70.1	0.1	0.0	61.3
Test Fishery - Fall Chum							
Big Eddy (6.0-inch drift gillnet)	350	4.3	44.6	51.1	0.0	0.0	64.6
Middle Mouth (6.0-inch drift gillnet)	233	0.4	25.3	74.2	0.0	0.0	70.0
Mountain Village (5 7/8-inch drift gillnet)	616	1.6	35.2	63.0	0.2	0.0	56.8
Kaltag (5 7/8-inch drift gillnet)	548	0.9	26.3	72.8	0.0	0.0	42.8
Eagle Sonar (2.75 to 7.5-inch mesh drift gillne	156	0.6	33.3	65.4	0.6	0.0	34.6
Eagle Sonar (5.75-inch mesh set gillnet)	40	0.0	12.6	87.4	0.0	0.0	33.4
Canada (fish wheel)	942	1.3	34.5	63.7	0.5	0.0	55.0
Test Fishery Fall Chum Average <sup>c</sup>		1.3	30.3	68.2	0.2	0.0	51.0
Escapement - Summer Chum							
Andreafsky River, East Fork (weir trap)	658	0.6	27.3	72.0	0.1	0.0	48.6
Anvik River (beach seine)	482	1.3	39.8	58.9	0.0	0.0	50.7
Gisasa River (weir trap)	496	0.1	11.4	88.5	0.0	0.0	52.2
Tozitna River (weir trap)	543	0.1	35.0	64.9	0.0	0.0	53.8
Escapement Summer Chum Average <sup>c</sup>		0.5	28.4	71.1	0.0	0.0	51.3
Escapement - Fall Chum							
Delta River (carcass, hand picked) <sup>d</sup>	179	10.6	47.5	40.2	1.7	0.0	53.6
Sheenjek River (beach seine) <sup>d</sup>	179	1.1	22.9	73.2	2.8	0.0	54.7
Toklat River (carcass, hand picked) <sup>d</sup>	53	0.0	56.6	32.1	11.3	0.0	75.5
Chandalar River (carcass, hand picked) <sup>d</sup>	179	3.9	25.1	62.0	8.9	0.0	47.5
Salcha River (carcass, hand picked) <sup>d</sup>	158	1.9	29.7	60.8	7.6	0.0	54.4
Escapement Fall Chum Average <sup>c</sup>		3.5	36.4	53.7	6.5	0.0	57.2
Total Summer Chum 5,090							
Total Fall Chum 6,473							

<sup>a</sup> Gillnet mesh size was restricted to 6-inch or less during the second commercial fishing period and unrestricted during all other periods.

<sup>b</sup> Sex was determined for 60 of 90 aged fish.

<sup>c</sup> Averages were not weighted by sample sizes.

<sup>d</sup> Ages were obtained from vertebrae.

**Table 8.**—Yukon River Districts 1, 2, 3, and 6 summer chum salmon and Districts 1, 5, and 6 fall chum salmon commercial harvest age and sex composition, 2006.

Season	District	Sample Size	Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		No.	%
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Summer Chum Salmon														
District 1 <sup>a</sup>	734	Males	0	0.0	2,605	11.7	9,439	42.3	46	0.2	0	0.0	12,089	54.2
		Females	45	0.2	2,258	10.1	7,926	35.5	0	0.0	0	0.0	10,229	45.8
		Subtotal	45	0.2	4,863	21.8	17,365	77.8	46	0.2	0	0.0	22,318	100.0
District 2 <sup>b</sup>	473	Males	0	0.0	2,422	9.5	12,175	47.7	108	0.4	0	0.0	14,705	57.6
		Females	0	0.0	2,613	10.2	8,225	32.2	0	0.0	0	0.0	10,838	42.4
		Subtotal	0	0.0	5,035	19.7	20,400	79.9	108	0.4	0	0.0	25,543	100.0
District 3 <sup>a</sup>	58	Males	0	0.0	14	12.1	78	67.2	0	0.0	0	0.0	92	79.3
		Females	0	0.0	2	1.7	22	19.0	0	0.0	0	0.0	24	20.7
		Subtotal	0	0.0	16	13.8	100	86.2	0	0.0	0	0.0	116	100.0
District 6 <sup>c</sup>	674	Males	0	0.0	2,027	4.5	17,104	38.3	0	0.0	0	0.0	19,132	42.9
		Females	0	0.0	2,533	5.7	22,956	51.4	0	0.0	0	0.0	25,489	57.1
		Subtotal	0	0.0	4,560	10.2	40,061	89.8	0	0.0	0	0.0	44,621	100.0
Districts 1, 2, 3, 6 Combined	1,939	Males	0	0.0	7,068	7.6	38,797	41.9	154	0.2	0	0.0	46,019	49.7
		Females	45	0.0	7,406	8.0	39,129	42.3	0	0.0	0	0.0	46,579	50.3
		Total	45	0.0	14,474	15.6	77,926	84.2	154	0.2	0	0.0	92,598	100.0
Fall Chum Salmon														
District 1 <sup>d</sup>	1,404	Males	981	1.0	20,763	20.5	26,951	26.6	0	0.0	0	0.0	48,695	48.1
		Females	913	0.9	21,714	21.4	29,805	29.4	127	0.1	0	0.0	52,559	51.9
		Total	1,894	1.9	42,477	42.0	56,756	56.1	127	0.1	0	0.0	101,254	100.0
District 5 <sup>c</sup>	547	Males	134	1.3	2,605	26.0	2,399	23.9	0	0.0	0	0.0	5,138	51.2
		Females	191	1.9	2,480	24.7	2,221	22.2	0	0.0	0	0.0	4,892	48.8
		Total	325	3.2	5,085	50.7	4,620	46.1	0	0.0	0	0.0	10,030	100.0
District 6 <sup>e</sup>	296	Males	156	0.7	6,428	27.5	5,144	22.0	0	0.0	0	0.0	11,728	50.2
		Females	125	0.5	6,772	29.0	4,728	20.2	0	0.0	0	0.0	11,625	49.8
		Total	281	1.2	13,201	56.5	9,872	42.3	0	0.0	0	0.0	23,353	100.0
Districts 1, 5, 6 Combined	2,247	Males	1,271	0.9	29,796	22.1	34,494	25.6	0	0.0	0	0.0	65,561	48.7
		Females	1,229	0.9	30,966	23.0	36,754	27.3	127	0.1	0	0.0	69,076	51.3
		Total	2,500	1.9	60,762	45.1	71,249	52.9	127	0.1	0	0.0	134,637	100.0

-continued-

**Table 8.**—Page 2 of 2.

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- <sup>a</sup> All Commercial fishing periods in District 1 summer season allowed unrestricted mesh sizes. 8.0-inch or larger mesh size gillnets were likely used because it was a Chinook salmon directed fishery.
- <sup>b</sup> Commercial fishing gear was gillnets with mesh size restricted to  $\leq 6$ -inch for 1 period and unrestricted mesh sizes for all other periods. 8.0-inch or larger mesh size gillnets were likely used because it was a Chinook salmon directed fishery.
- <sup>c</sup> Commercial fishing gear was fish wheels.
- <sup>d</sup> Commercial fishing gear was gillnets with mesh size restricted to  $\leq 6$ -inch.
- <sup>e</sup> Commercial fishing gear was gillnets and fish wheels.

**Table 9.**–Yukon River summer chum salmon age percentages from combined commercial and subsistence samples, 1985–2006.

Year	Sample Size <sup>a</sup>	Percent (%)				
		Age				
		0.2	0.3	0.4	0.5	0.6
1985	2,472	1.4	68.6	29.2	0.8	0.0
1986	3,473	0.1	29.1	69.8	1.0	0.0
1987	2,184	0.4	60.8	31.8	6.9	0.0
1988	5,112	0.0	70.1	29.1	0.8	0.0
1989	3,778	0.4	38.7	60.5	0.4	0.0
1990	3,155	0.4	38.3	58.9	2.4	0.0
1991	5,015	1.3	48.0	49.8	0.9	0.0
1992	4,303	0.2	31.0	65.0	3.8	0.0
1993	2,011	0.4	47.5	47.7	4.5	0.0
1994	3,820	0.1	51.3	46.6	2.0	0.0
1995	4,740	0.6	51.9	45.3	2.1	0.0
1996	3,863	0.4	46.2	48.8	4.5	0.1
1998	1,147	0.3	62.8	34.2	2.7	0.0
1999	1,627	0.2	40.7	58.2	0.9	0.0
2000	442	0.0	44.2	53.4	2.4	0.0
2001 <sup>b</sup>	586	0.0	15.4	81.9	2.7	0.0
2002	1,103	0.1	52.9	44.4	2.6	0.0
2003	1,144	0.3	55.4	39.2	5.1	0.0
2004	2,742	1.3	37.2	60.4	1.0	0.1
2005	2,079	0.2	83.3	14.9	1.5	0.0
2006	2,287	0.0	15.7	84.1	0.2	0.0
Average <sup>c</sup> (1985-2005)	2,740	0.4	48.7	48.5	2.5	0.0
10-yr avg. <sup>c</sup> (1996-2005)	1,637	0.3	48.7	48.4	2.6	0.0
5-yr avg. <sup>c</sup> (2001-2005)	1,531	0.4	48.8	48.2	2.6	0.0

<sup>a</sup> Samples were from fish wheels and gillnets with various mesh sizes.

<sup>b</sup> No commercial fishing occurred in 2001, samples were from subsistence harvests.

<sup>c</sup> Averages were not weighted by number of fish sampled each year.

**Table 10.**—Yukon River summer chum salmon age and female percentages from the combined Big Eddy and Middle Mouth 5.5-inch mesh gillnet test fishery catches, 1985–2006.

Year	Sample Size	Number of Days <sup>a</sup>	Percent (%)					Females
			Age					
			0.2	0.3	0.4	0.5	0.6	
1985	954	19	0.0	62.4	37.1	0.5	0.0	51.6
1986	1,125	27	0.1	26.2	73.2	0.4	0.0	55.1
1987	1,169	34	0.6	48.8	43.7	6.8	0.0	56.8
1988	804	30	0.1	50.5	48.4	1.0	0.0	59.5
1989	1,074	29	0.0	39.9	59.5	0.6	0.0	62.2
1990	1,328	42	0.8	46.1	50.1	3.1	0.0	66.0
1991	1,495	41	0.0	45.4	53.6	0.9	0.0	55.2
1992	1,089	32	0.0	22.0	71.8	6.2	0.0	61.4
1993	1,757	46	0.1	38.2	57.4	4.4	0.0	50.4
1994	2,385	49	0.0	35.6	61.9	2.6	0.0	62.5
1995	1,839	38	0.5	40.2	53.2	6.1	0.0	56.2
1996	1,936	47	0.1	42.3	52.4	5.2	0.0	63.7
1997	1,947	46	0.0	24.1	71.5	4.4	0.0	61.0
1998	1,649	47	0.0	62.5	33.5	4.0	0.0	52.5
1999	1,227	33	1.1	48.1	47.4	3.4	0.0	50.0
2000	950	38	0.2	52.5	45.8	1.5	0.0	63.8
2001	724	33	0.0	25.0	73.8	1.2	0.0	64.6
2002	792	45	0.5	57.3	40.4	1.8	0.0	63.3
2003	822	42	0.4	78.7	18.7	2.2	0.0	54.4
2004	521	45	3.1	40.1	56.8	0.0	0.0	66.0
2005	754	32	0.1	89.8	9.9	0.1	0.0	54.5
2006	860	30	0.3	27.3	72.2	0.1	0.0	59.0
Average <sup>b</sup> (1987, 1990-2005)	1,288	40	0.4	47.1	49.5	3.0	0.0	59.0
5-yr average <sup>b</sup> (2001-2005)	723	39	0.8	58.2	39.9	1.1	0.0	60.6

<sup>a</sup> Big Eddy and Middle Mouth 5.5" gillnet test fishery projects were conducted from the end of May through July 15, prior to 1990 these projects were often discontinuous within the season or were not conducted throughout the season. The "Number of Days" refers only to those days that scale samples were collected from Chinook salmon and aged.

<sup>b</sup> Years used for average only include years when samples were collected throughout the season and include samples with a 30 day season minimum. Average was not weighted by number of fish sampled each year.

**Table 11.**—Yukon River summer and fall chum salmon mean lengths (mm) by project, gear, sex and age, 2006.

Sex and Season	Project Location	Project Type and (Gear) <sup>a</sup>	Brood Year (Age)				
			2003 (0.2)	2002 (0.3)	2001 (0.4)	2000 (0.5)	1999 (0.6)
Male Summer Chum							
	District 1	Com (GN)	-	579	604	675	-
	District 2	Com (GN)	-	582	610	610	-
	District 3	Com (GN)	-	581	623	-	-
	District 6	Com (FW)	-	584	590	-	-
	District 1	Sub (5.5-inch GN)	-	573	593	-	-
	District 2	Sub (8.5-inch GN)	-	-	618	-	-
	Big Eddy	TF (5.5-inch DGN)	-	567	590	-	-
	Middle Mouth	TF (5.5-inch DGN)	558	578	579	-	-
	Andreafsky, E.F.	Esc (WR)	493	561	580	540	-
	Anvik	Esc (SN)	561	575	589	-	-
	Gisasa	Esc (WR)	500	586	574	-	-
	Tozitna	Esc (WR)	513	552	574	-	-
	Male Summer Chum Average <sup>b</sup>		525	574	594	608	-
Female Summer Chum							
	District 1	Com (GN)	538	558	575	-	-
	District 2	Com (GN)	-	557	589	-	-
	District 3	Com (GN)	-	535	594	-	-
	District 6	Com (FW)	-	559	567	-	-
	District 1	Sub (5.5-inch GN)	-	555	575	-	-
	District 2	Sub (8.5-inch GN)	-	-	600	-	-
	Big Eddy	TF (5.5-inch DGN)	-	551	568	610	-
	Middle Mouth	TF (5.5-inch DGN)	535	558	574	-	-
	Andreafsky, E.F.	Esc (WR)	487	520	536	-	-
	Anvik	Esc (SN)	548	543	548	-	-
	Gisasa	Esc (WR)	460	535	545	-	-
	Tozitna	Esc (WR)	525	534	542	-	-
	Female Summer Chum Average <sup>b</sup>		516	546	568	610	-
Male Fall Chum							
	District 1	Com (GN)	565	578	599	-	-
	District 5	Com (FW)	565	597	609	-	-
	District 6	Com (GN, FW)	552	594	601	-	-
	District 5	Sub (FW)	-	608	606	-	-
	District 6	Sub (FW)	555	585	601	-	-
	Big Eddy	TF (6.0-inch DGN)	527	575	600	-	-
	Middle Mouth	TF (6.0-inch DGN)	-	591	611	-	-
	Mt. Village	TF (5 7/8-inch DGN)	558	584	604	600	-
	Kaltag	TF (5 7/8-inch DGN)	580	604	609	-	-
	Eagle Sonar	TF (DGN)	585	598	611	700	-
	Eagle Sonar	TF (5.75-inch SGN)	-	576	596	-	-
	Delta <sup>c</sup>	Esc (CR)	561	577	597	565	-
	Sheenjek <sup>c</sup>	Esc (SN)	-	622	622	630	-
	Toklat <sup>c</sup>	Esc (CR)	-	561	586	560	-
	Chandalar <sup>c</sup>	Esc (CR)	548	585	581	577	-
	Salcha <sup>c</sup>	Esc (CR)	620	604	586	586	-
	Male Fall Chum Average <sup>b</sup>		565	590	601	603	-
Female Fall Chum							
	District 1	Com (GN)	560	574	586	610	-
	District 5	Com (FW)	536	578	591	-	-
	District 6	Com (GN, FW)	570	574	581	-	-
	District 5	Sub (FW)	-	576	581	-	-
	District 6	Sub (FW)	550	566	577	-	-
	Big Eddy	TF (6.0-inch DGN)	541	567	576	-	-
	Middle Mouth	TF (6.0-inch DGN)	560	591	599	-	-
	Mt. Village	TF (5 7/8-inch DGN)	564	578	588	-	-
	Kaltag	TF (5 7/8-inch DGN)	567	586	599	-	-
	Eagle Sonar	TF (DGN)	-	566	589	-	-
	Eagle Sonar	TF (5.75-inch SGN)	-	598	606	-	-
	Delta <sup>c</sup>	Esc (CR)	531	535	562	578	-
	Sheenjek <sup>c</sup>	Esc (SN)	570	571	601	610	-
	Toklat <sup>c</sup>	Esc (CR)	-	551	546	550	-
	Chandalar <sup>c</sup>	Esc (CR)	540	546	555	568	-
	Salcha <sup>c</sup>	Esc (CR)	505	540	548	530	-
	Female Fall Chum Average <sup>b</sup>		550	569	580	574	-

-continued-

**Table 11.**–Page 2 of 2.

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- <sup>a</sup> Com is commercial, Sub is subsistence, TF is test fishery, Esc is escapement, GN is gillnet preceded by mesh size, DGN is drift gillnet, FW is fish wheel, WR is weir, SN is seine net, and CR is carcass.
- <sup>b</sup> Average was not weighted by number of fish sampled in each project.
- <sup>c</sup> Ages were obtained from vertebrae.



**Table 12.**—Yukon River coho salmon age and female percentages from commercial, test fishery, and escapement projects, 2006.

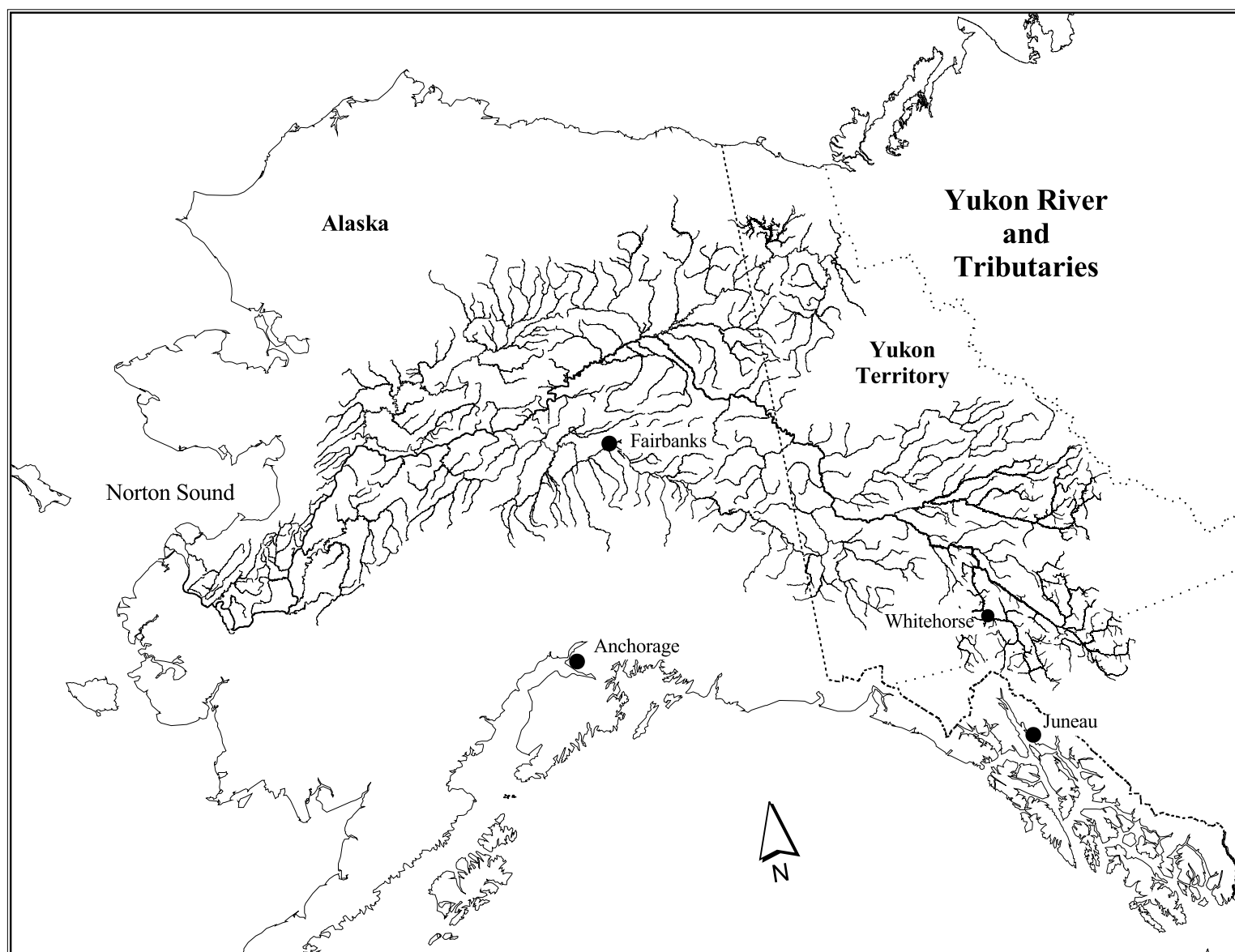
Project Type Location (gear)	Sample Size	Percent (%)			Female
		Age			
		(1.1)	(2.1)	(3.1)	
Commercial					
District 1 (≤ 6-inch gillnet)	992	15.2	81.5	3.3	48.2
Test Fishery					
Big Eddy (6.0-inch drift gillnet)	93	17.2	77.4	5.4	49.5
Middle Mouth (6.0-inch drift gillnet)	36	11.1	83.3	5.6	38.9
Mountain Village (5 7/8-inch drift gillnet)	161	6.8	90.1	3.1	43.5
Kaltag (5 7/8-inch drift gillnet)	27	22.2	74.1	3.7	18.5
Test Fishery Average <sup>a</sup>		14.3	81.2	4.4	37.6
Escapement					
Otter Creek (rod/reel)	51	13.7	76.5	9.8	49.0
Total Samples	1,360				

<sup>a</sup> Averages were not weighted by number of fish sampled in each project.

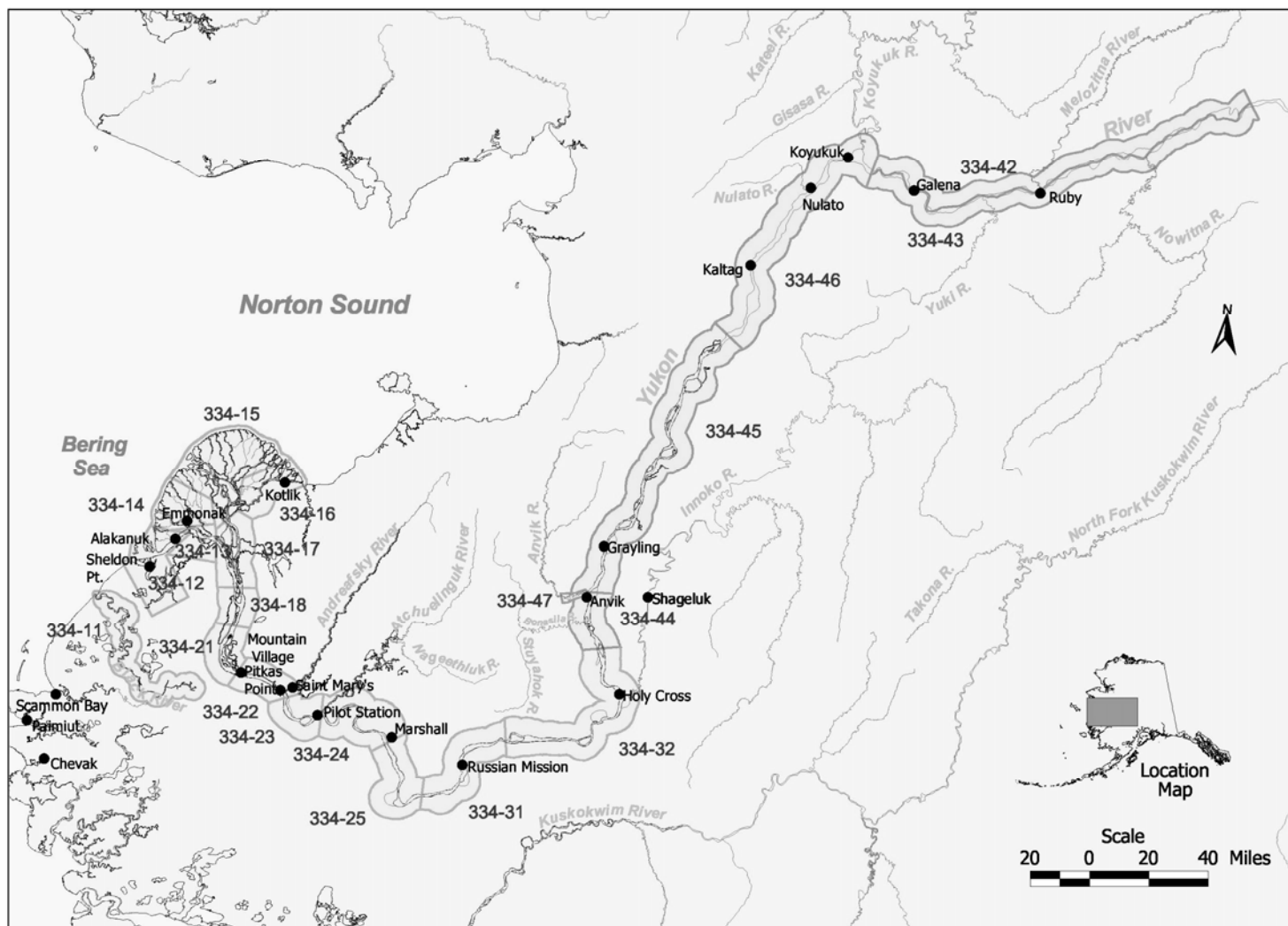
**Table 13.**—Yukon River coho salmon mean lengths (mm) by project, sex, gear, and age, 2006.

Sex	Project Location	Project Type and (Gear) <sup>a</sup>	Brood Year (Age)		
			2003 (1.1)	2002 (2.1)	2001 (3.1)
Male	District 1	Com (GN)	550	554	558
	Big Eddy	TF (6.0-inch DGN)	537	541	522
	Middle Mouth	TF (6.0-inch DGN)	587	555	520
	Mt. Village	TF (5 7/8-inch DGN)	546	546	560
	Kaltag	TF (5 7/8-inch DGN)	554	566	-
	Otter Creek	Esc (rod/reel)	525	518	503
		Male Average	555	552	540
Female	District 1	Com (GN)	544	549	545
	Big Eddy	TF (6.0-inch DGN)	555	550	-
	Middle Mouth	TF (6.0-inch DGN)	550	568	575
	Mt. Village	TF (5 7/8-inch DGN)	555	556	595
	Kaltag	TF (5 7/8-inch DGN)	-	538	570
	Otter Creek	Esc (rod/reel)	527	540	525
		Female Average	551	552	571

<sup>a</sup> Com is commercial, TF is test fishery, Esc is escapement, GN is gillnet preceded by mesh size, DGN is drift gillnet, and WR is weir.

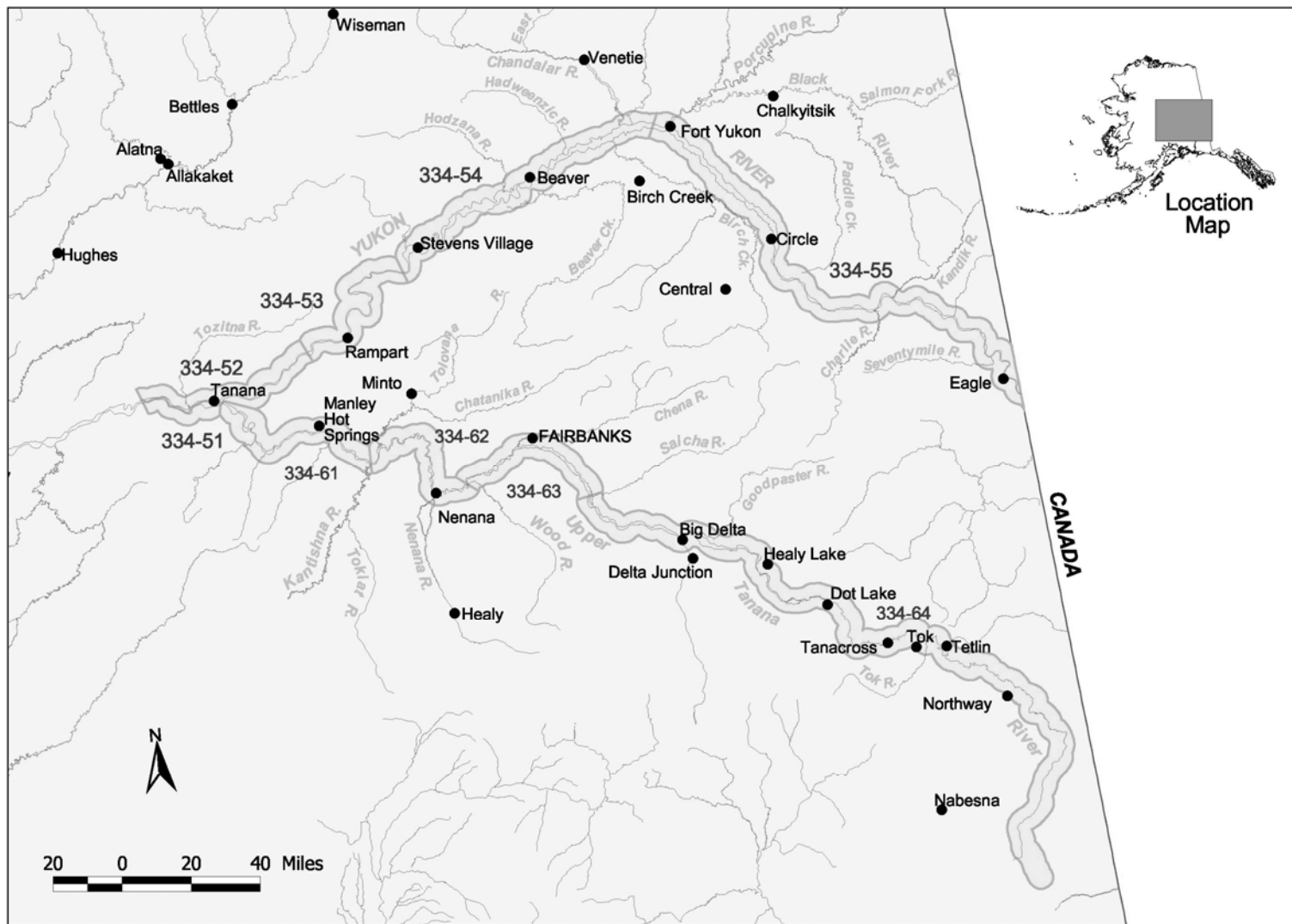


**Figure 1.**—Yukon River drainage in Alaska and Canada.



*Note:* District 1 is composed of areas 334-11 through 334-18, District 2 is areas 334-21 through 334-25, District 3 is areas 334-31 and 334-32, Subdistrict 4-A is areas 334-44 through 334-47, Subdistrict 4-B (north bank) is 334-42, and Subdistrict 4-C (south bank) is 334-43.

**Figure 2.**—Lower Yukon Area statistical codes.



*Note:* District 5 is composed of Subdistrict 5-A (south bank) area 334-51, Subdistrict 5-B is area 334-52, Subdistrict 5-C is area 334-53, and Subdistrict 5-D is areas 334-54 and 334-55. District 6 is composed of Subdistrict 6-A area 334-61, Subdistrict 6-B is area 334-62, and Subdistrict 6-C is area 334-63.

**Figure 3.**—Upper Yukon Area statistical codes.

## **APPENDIX A: CHINOOK SALMON TABLES**

**Appendix A1.**–Yukon River, District 1, Chinook salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.

			Brood Year (Age)																Total			
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)										
Sample Dates	Sample Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%				
6/19-20 Period 1	387	Males	0	0.0	73	1.6	1,783	37.7	0	0.0	744	15.7	0	0.0	0	0.0	0	0.0	2,600	55.0		
		Females	0	0.0	0	0.0	758	16.0	0	0.0	1,296	27.4	0	0.0	73	1.6	0	0.0	2,126	45.0		
		Subtotal	0	0.0	73	1.6	2,540	53.7	0	0.0	2,039	43.2	0	0.0	73	1.6	0	0.0	4,726	100.0		
6/25-26 Period 2	389	Males	0	0.0	186	2.6	1,670	23.1	0	0.0	798	11.1	0	0.0	37	0.5	0	0.0	0	0.0	2,691	37.3
		Females	0	0.0	19	0.3	1,448	20.1	0	0.0	2,951	40.9	0	0.0	111	1.5	0	0.0	0	0.0	4,528	62.7
		Subtotal	0	0.0	204	2.8	3,118	43.2	0	0.0	3,749	51.9	0	0.0	148	2.1	0	0.0	0	0.0	7,219	100.0
6/29-30 Period 3	395	Males	0	0.0	97	1.3	2,422	31.6	0	0.0	930	12.2	0	0.0	39	0.5	0	0.0	0	0.0	3,488	45.6
		Females	0	0.0	0	0.0	1,240	16.2	0	0.0	2,868	37.5	0	0.0	39	0.5	19	0.3	0	0.0	4,166	54.4
		Subtotal	0	0.0	97	1.3	3,662	47.8	0	0.0	3,798	49.6	0	0.0	78	1.0	19	0.3	0	0.0	7,654	100.0
7/3-4 Period 4	387	Males	0	0.0	40	1.3	816	26.4	0	0.0	528	17.1	0	0.0	24	0.8	0	0.0	0	0.0	1,408	45.5
		Females	0	0.0	0	0.0	512	16.5	0	0.0	1,152	37.2	0	0.0	24	0.8	0	0.0	0	0.0	1,688	54.5
		Subtotal	0	0.0	40	1.3	1,328	42.9	0	0.0	1,680	54.3	0	0.0	48	1.6	0	0.0	0	0.0	3,096	100.0
7/6 Period 5	230	Males	0	0.0	13	1.3	278	27.0	0	0.0	198	19.1	0	0.0	18	1.7	0	0.0	0	0.0	508	49.1
		Females	0	0.0	0	0.0	171	16.5	0	0.0	346	33.5	4	0.4	4	0.4	0	0.0	0	0.0	525	50.9
		Subtotal	0	0.0	13	1.3	449	43.5	0	0.0	543	52.6	4	0.4	22	2.2	0	0.0	0	0.0	1,033	100.0
Other <sup>a</sup>	0 <sup>b</sup>	Males	0	0.0	14	1.7	240	29.4	0	0.0	110	13.5	0	0.0	4	0.5	0	0.0	0	0.0	368	45.1
		Females	0	0.0	1	0.1	142	17.4	0	0.0	297	36.3	0	0.0	9	1.1	1	0.1	0	0.0	449	54.9
		Subtotal	0	0.0	15	1.8	382	46.8	0	0.0	407	49.8	0	0.0	13	1.6	1	0.1	0	0.0	817	100.0
Total All Periods	1,788	Males	0	0.0	423	1.7	7,209	29.4	0	0.0	3,308	13.5	0	0.0	122	0.5	0	0.0	0	0.0	11,062	45.1
		Females	0	0.0	19	0.1	4,270	17.4	0	0.0	8,908	36.3	5	0.0	261	1.1	20	0.1	0	0.0	13,483	54.9
		Total	0	0.0	442	1.8	11,479	46.8	0	0.0	12,216	49.8	5	0.0	382	1.6	20	0.1	0	0.0	24,545	100.0
Mean Length		Males	-		596		771		-		859		-		920		-	-	-			
Std. Error			-		14		2		-		3		-		13		-	-	-			
Mean Length		Females	-		670		803		-		863		875		913		810		-	-		
Std. Error			-		-		3		-		2		-		12		-	-	-			

*Note:* All District 1 commercial fishing periods permitted unrestricted mesh sizes, because it was a Chinook directed fishery, 8.0-inch mesh and larger was likely used.

<sup>a</sup> Other includes all ADF&G test fish sold; these fish were not recorded as part of the harvest for any period.

<sup>b</sup> Test fish sold during the commercial fishery were not sampled, therefore, the age composition was calculated using percentages from the season total.

**Appendix A2.**–Yukon River, District 2, Chinook salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.

			Brood Year (Age)														Total					
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)										
Sample Dates	Sample Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%				
6/15 Period 1	289	Males	0	0.0	3	0.3	471	51.4	0	0.0	143	15.6	3	0.3	0	0.0	0	0.0	624	68.0		
		Females	0	0.0	0	0.0	103	11.2	0	0.0	190	20.8	0	0.0	0	0.0	0	0.0	293	32.0		
		Subtotal	0	0.0	3	0.3	574	62.6	0	0.0	333	36.3	3	0.3	0	0.0	0	0.0	917	100.0		
6/22 Period 2 <sup>a</sup>	0	Males	0	0.0	7	1.5	195	40.9	0	0.0	97	20.3	2	0.5	4	0.8	0	0.0	0	0.0	306	64.0
		Females	0	0.0	0	0.0	61	12.9	0	0.0	107	22.4	0	0.0	4	0.8	0	0.0	0	0.0	172	36.0
		Subtotal	0	0.0	7	1.5	257	53.7	0	0.0	204	42.7	2	0.5	7	1.5	0	0.0	0	0.0	478	100.0
6/24 Period 3	389	Males	0	0.0	91	1.5	2,416	40.9	0	0.0	1,200	20.3	30	0.5	46	0.8	0	0.0	0	0.0	3,784	64.0
		Females	0	0.0	0	0.0	760	12.9	0	0.0	1,322	22.4	0	0.0	46	0.8	0	0.0	0	0.0	2,127	36.0
		Subtotal	0	0.0	91	1.5	3,176	53.7	0	0.0	2,522	42.7	30	0.5	91	1.5	0	0.0	0	0.0	5,911	100.0
6/27 Period 4	393	Males	0	0.0	164	2.3	2,799	39.2	0	0.0	1,127	15.8	18	0.3	18	0.3	0	0.0	0	0.0	4,126	57.8
		Females	0	0.0	0	0.0	1,218	17.0	0	0.0	1,745	24.4	0	0.0	55	0.8	0	0.0	0	0.0	3,018	42.2
		Subtotal	0	0.0	164	2.3	4,017	56.2	0	0.0	2,872	40.2	18	0.3	73	1.0	0	0.0	0	0.0	7,144	100.0
7/2 Period 5	391	Males	0	0.0	70	1.8	1,228	31.5	0	0.0	838	21.5	0	0.0	0	0.0	0	0.0	0	0.0	2,136	54.7
		Females	0	0.0	0	0.0	599	15.3	0	0.0	1,148	29.4	0	0.0	20	0.5	0	0.0	0	0.0	1,767	45.3
		Subtotal	0	0.0	70	1.8	1,827	46.8	0	0.0	1,986	50.9	0	0.0	20	0.5	0	0.0	0	0.0	3,903	100.0
7/6 Period 6 <sup>b</sup>	0	Males	0	0.0	27	1.8	466	31.5	0	0.0	318	21.5	0	0.0	0	0.0	0	0.0	0	0.0	811	54.7
		Females	0	0.0	0	0.0	227	15.3	0	0.0	436	29.4	0	0.0	8	0.5	0	0.0	0	0.0	670	45.3
		Subtotal	0	0.0	27	1.8	693	46.8	0	0.0	754	50.9	0	0.0	8	0.5	0	0.0	0	0.0	1,481	100.0
Total All Periods	1,462	Males	0	0.0	362	1.8	7,576	38.2	0	0.0	3,724	18.8	54	0.3	71	0.4	0	0.0	0	0.0	11,786	59.4
		Females	0	0.0	0	0.0	2,968	15.0	0	0.0	4,948	24.9	0	0.0	131	0.7	0	0.0	0	0.0	8,048	40.6
		Total	0	0.0	362	1.8	10,544	53.2	0	0.0	8,672	43.7	54	0.3	202	1.0	0	0.0	0	0.0	19,834	100.0
Mean Length		Males	-		577		760		-		852		683		874		-		-			
Std. Error			-		12		2		-		4		13		22		-		-			
Mean Length		Females	-		580		786		-		854		850		881		-		-			
Std. Error			-		-		3		-		3		-		19		-		-			

*Note:* Mesh size was restricted to 6-inch for period 2 and unrestricted for all other periods; because it was a Chinook directed fishery, 8.0-inch mesh and larger was most likely used.

<sup>a</sup> Age and sex composition was estimated from period 3.

<sup>b</sup> Age and sex composition was estimated from period 5.

**Appendix A3.**–Yukon River, District 3, Chinook salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.

Sample Dates			Sample Size			Brood Year (Age)												Total							
						2003		2002		2001		2000		1999		1998									
						(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)	
						No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/21 Period 1	101	Males	0	0.0	5	2.0	90	38.6	0	0.0	48	20.8	2	1.0	2	1.0	2	1.0	0	0.0	0	0.0	149	64.4	
		Females	0	0.0	0	0.0	32	13.9	0	0.0	48	20.8	0	0.0	2	1.0	0	0.0	0	0.0	0	0.0	83	35.6	
		Subtotal	0	0.0	5	2.0	122	52.5	0	0.0	96	41.6	2	1.0	5	2.0	2	1.0	0	0.0	0	0.0	232	100.0	
6/26 Period 2 <sup>a</sup>	0	Males	0	0.0	2	2.0	32	38.6	0	0.0	17	20.8	1	1.0	1	1.0	1	1.0	0	0.0	0	0.0	53	64.4	
		Females	0	0.0	0	0.0	12	13.9	0	0.0	17	20.8	0	0.0	1	1.0	0	0.0	0	0.0	0	0.0	30	35.6	
		Subtotal	0	0.0	2	2.0	44	52.5	0	0.0	35	41.6	1	1.0	2	2.0	1	1.0	0	0.0	0	0.0	83	100.0	
Total All Periods	101	Males	0	0.0	6	2.0	122	38.6	0	0.0	65	20.8	3	1.0	3	1.0	3	1.0	0	0.0	0	0.0	203	64.4	
		Females	0	0.0	0	0.0	44	13.9	0	0.0	65	20.8	0	0.0	3	1.0	0	0.0	0	0.0	0	0.0	112	35.6	
		Total	0	0.0	6	2.0	165	52.5	0	0.0	131	41.6	3	1.0	6	2.0	3	1.0	0	0.0	0	0.0	315	100.0	
Mean Length		Males	-	568	750	-	865	715	990	900	-	-													
Std. Error			-	38	8	-	16	-	-	-	-	-													
Mean Length		Females	-	-	780	-	869	-	960	-	-	-													
Std. Error			-	-	17	-	12	-	-	-	-	-													

*Note:* All District 3 commercial fishing periods permitted unrestricted mesh sizes, because it was a Chinook directed fishery, 8.0-inch mesh and larger was likely used.

<sup>a</sup> Age and sex composition was estimated from period 1.



**Appendix A4.**–Yukon River, District 5 (Subdistricts 5-B and 5-C), Chinook salmon commercial harvest age and sex composition and mean length (mm), 2006.

		Brood Year (Age)																		
Sample Dates	Sample Size		2003		2002		2001		2000		1999		1998				Total			
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)								
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
7/7-8 Period 1	145	Males	0	0.0	32	11.7	166	61.4	0	0.0	21	7.6	0	0.0	0	0.0	0	0.0	219	80.7
		Females	0	0.0	0	0.0	17	6.2	0	0.0	34	12.4	0	0.0	2	0.7	0	0.0	52	19.3
		Subtotal	0	0.0	32	11.7	183	67.6	0	0.0	54	20.0	0	0.0	2	0.7	0	0.0	271	100.0
7/8-9 Period 2 <sup>a</sup>	0	Males	0	0.0	54	11.7	281	61.4	0	0.0	35	7.6	0	0.0	0	0.0	0	0.0	370	80.7
		Females	0	0.0	0	0.0	28	6.2	0	0.0	57	12.4	0	0.0	3	0.7	0	0.0	88	19.3
		Subtotal	0	0.0	54	11.7	310	67.6	0	0.0	92	20.0	0	0.0	3	0.7	0	0.0	458	100.0
7/11-12 Period 3	157	Males	0	0.0	14	3.2	205	45.9	0	0.0	20	4.5	0	0.0	0	0.0	0	0.0	239	53.5
		Females	0	0.0	3	0.6	131	29.3	0	0.0	68	15.3	0	0.0	3	0.6	3	0.6	208	46.5
		Subtotal	0	0.0	17	3.8	336	75.2	0	0.0	88	19.7	0	0.0	3	0.6	3	0.6	447	100.0
7/12-13 Period 4	147	Males	0	0.0	17	4.8	126	35.4	0	0.0	19	5.4	0	0.0	0	0.0	0	0.0	163	45.6
		Females	0	0.0	29	8.2	100	27.9	0	0.0	63	17.7	0	0.0	0	0.0	2	0.7	194	54.4
		Subtotal	0	0.0	46	12.9	226	63.3	0	0.0	83	23.1	0	0.0	0	0.0	2	0.7	357	100.0
7/14-15 Period 5 <sup>b</sup>	0	Males	0	0.0	15	4.8	108	35.4	0	0.0	17	5.4	0	0.0	0	0.0	0	0.0	139	45.6
		Females	0	0.0	25	8.2	85	27.9	0	0.0	54	17.7	0	0.0	0	0.0	2	0.7	167	54.4
		Subtotal	0	0.0	40	12.9	194	63.3	0	0.0	71	23.1	0	0.0	0	0.0	2	0.7	306	100.0
Total All Periods	449	Males	0	0.0	131	7.1	887	48.2	0	0.0	111	6.1	0	0.0	0	0.0	0	0.0	1,130	61.4
		Females	0	0.0	57	3.1	361	19.6	0	0.0	276	15.0	0	0.0	8	0.4	7	0.4	709	38.6
		Total	0	0.0	188	10.2	1,248	67.9	0	0.0	387	21.1	0	0.0	8	0.4	7	0.4	1,839	100.0
Mean Length Std. Error	Males	-		590		704		-		739		-		-		-		-		
		-		8		4		-		8		-		-		-		-		
Mean Length Std. Error	Females	-		592		727		-		842		-		960		785		-		
		-		9		7		-		8		-		25		40		-		

Note: Samples were collected from mixed gear including gillnets and fish wheels.

<sup>a</sup> Age and sex composition was estimated from period 1.

<sup>b</sup> Age and sex composition was estimated from period 4.

**Appendix A5.**—Yukon River, District 1, Chinook salmon subsistence 5.5-inch mesh gillnet harvest age composition, 2006.

Sample Dates <sup>a</sup>	Sample Size	Brood Year (Age)																Total					
		2003		2002		2001		2000		1999		1998											
		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)				(1.6)		(2.5)	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			No.	%	No.	%
6/16	10	0	0.0	4	40.0	6	60.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	10	100.0
6/22	4	0	0.0	0	0.0	3	75.0	0	0.0	1	25.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	100.0
Season Total	14	0	0.0	4	28.6	9	64.3	0	0.0	1	7.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	14	100.0

<sup>a</sup> Sample dates are stratified by week.

**Appendix A6.**—Yukon River, District 1, Chinook salmon subsistence 8.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total					
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)										
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%						
6/7-9	12	Males	0	0.0	0	0.0	4	33.3	0	0.0	3	25.0	0	0.0	1	8.3	0	0.0	0	0.0	8	66.7
		Females	0	0.0	0	0.0	3	25.0	0	0.0	1	8.3	0	0.0	0	0.0	0	0.0	0	0.0	4	33.3
		Subtotal	0	0.0	0	0.0	7	58.3	0	0.0	4	33.3	0	0.0	1	8.3	0	0.0	0	0.0	12	100.0
6/13-14, 16	25	Males	0	0.0	0	0.0	14	56.0	0	0.0	2	8.0	0	0.0	0	0.0	0	0.0	0	0.0	16	64.0
		Females	0	0.0	0	0.0	3	12.0	0	0.0	6	24.0	0	0.0	0	0.0	0	0.0	0	0.0	9	36.0
		Subtotal	0	0.0	0	0.0	17	68.0	0	0.0	8	32.0	0	0.0	0	0.0	0	0.0	0	0.0	25	100.0
6/21-24	37	Males	0	0.0	0	0.0	11	29.7	0	0.0	11	29.7	0	0.0	0	0.0	0	0.0	0	0.0	22	59.5
		Females	0	0.0	0	0.0	5	13.5	0	0.0	10	27.0	0	0.0	0	0.0	0	0.0	0	0.0	15	40.5
		Subtotal	0	0.0	0	0.0	16	43.2	0	0.0	21	56.8	0	0.0	0	0.0	0	0.0	0	0.0	37	100.0
Season Total	74	Males	0	0.0	0	0.0	29	39.2	0	0.0	16	21.6	0	0.0	1	1.4	0	0.0	0	0.0	46	62.2
		Females	0	0.0	0	0.0	11	14.9	0	0.0	17	23.0	0	0.0	0	0.0	0	0.0	0	0.0	28	37.8
		Total	0	0.0	0	0.0	40	54.1	0	0.0	33	44.6	0	0.0	1	1.4	0	0.0	0	0.0	74	100.0
Mean Length Std. Error	Males	-	-	770		-	852		-	1020		-	-	-	-	-	-	-	-	-	-	
		-	-	8		-	15		-	-		-	-	-	-	-	-	-	-	-	-	
Mean Length Std. Error	Females	-	-	775		-	858		-	-		-	-	-	-	-	-	-	-	-	-	
		-	-	17		-	12		-	-		-	-	-	-	-	-	-	-	-	-	

<sup>a</sup> Sample dates are stratified by week.

**Appendix A7.**—Yukon River, District 1, Chinook salmon subsistence 8.5-inch mesh gillnet harvest age composition, 2006.

Sample Dates <sup>a</sup>	Sample Size	Brood Year (Age)														Total							
		2003		2002		2001		2000		1999		1998											
		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)			
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
6/7-9	12	0	0.0	0	0.0	7	58.3	0	0.0	4	33.3	0	0.0	1	8.3	0	0.0	0	0.0	0	0.0	12	100.0
6/13-14, 16	52	0	0.0	1	1.9	34	65.4	0	0.0	16	30.8	0	0.0	1	1.9	0	0.0	0	0.0	0	0.0	52	100.0
6/21-24	64	0	0.0	2	3.1	27	42.2	0	0.0	34	53.1	0	0.0	1	1.6	0	0.0	0	0.0	0	0.0	64	100.0
Season Total	128	0	0.0	3	2.3	68	53.1	0	0.0	54	42.2	0	0.0	3	2.3	0	0.0	0	0.0	0	0.0	128	100.0

<sup>a</sup> Combines all sexed (Appendix A6) and all unsexed Chinook salmon sampled from the 8.5-inch mesh gillnet subsistence harvest. Sample dates are stratified by week.

**Appendix A8.**—Yukon River, Subdistrict 4-A (Kaltag), Chinook salmon subsistence 8.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total					
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)										
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%						
6/27, 29-30	37	Males	0	0.0	0	0.0	5	13.5	0	0.0	3	8.1	0	0.0	0	0.0	0	0.0	8	21.6		
		Females	0	0.0	1	2.7	12	32.4	0	0.0	16	43.3	0	0.0	0	0.0	0	0.0	29	78.4		
		Subtotal	0	0.0	1	2.7	17	45.9	0	0.0	19	51.4	0	0.0	0	0.0	0	0.0	37	100.0		
7/2-6	174	Males	0	0.0	14	8.0	38	21.8	0	0.0	7	4.0	0	0.0	0	0.0	0	0.0	59	33.8		
		Females	0	0.0	0	0.0	56	32.2	0	0.0	57	32.9	0	0.0	2	1.1	0	0.0	0	0.0	115	66.2
		Subtotal	0	0.0	14	8.0	94	54.0	0	0.0	64	36.9	0	0.0	2	1.1	0	0.0	0	0.0	174	100.0
Season Total	211	Males	0	0.0	14	6.7	43	20.4	0	0.0	10	4.7	0	0.0	0	0.0	0	0.0	0	0.0	67	31.8
		Females	0	0.0	1	0.4	68	32.2	0	0.0	73	34.6	0	0.0	2	1.0	0	0.0	0	0.0	144	68.2
		Total	0	0.0	15	7.1	111	52.6	0	0.0	83	39.3	0	0.0	2	1.0	0	0.0	0	0.0	211	100.0
Mean Length		Males	-		569		718		-		818		-		-		-		-			
Std. Error			-		13		9		-		37		-		-		-		-			
Mean Length		Females	-		565		771		-		844		-		897		-		-			
Std. Error			-		-		7		-		6		-		88		-		-			

*Note:* Samples were collected by technicians employed by the City of Kaltag.

<sup>a</sup> Sample dates are stratified by week.

**Appendix A9.**—Yukon River, Subdistrict 4-A (Nulato), Chinook salmon subsistence gillnet harvest age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total					
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	No.	%								
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%						
7/5-8	68	Males	0	0.0	3	4.4	15	22.1	0	0.0	9	13.2	0	0.0	0	0.0	0	0.0	27	39.7		
		Females	0	0.0	4	5.9	18	26.5	0	0.0	17	25.0	0	0.0	1	1.5	1	1.5	41	60.3		
		Subtotal	0	0.0	7	10.3	33	48.5	0	0.0	26	38.2	0	0.0	1	1.5	1	1.5	68	100.0		
7/9-11	45	Males	0	0.0	1	2.2	9	20.0	0	0.0	5	11.1	0	0.0	1	2.2	0	0.0	0	0.0	16	35.6
		Females	0	0.0	2	4.4	9	20.0	0	0.0	18	40.0	0	0.0	0	0.0	0	0.0	0	0.0	29	64.4
		Subtotal	0	0.0	3	6.7	18	40.0	0	0.0	23	51.1	0	0.0	1	2.2	0	0.0	0	0.0	45	100.0
Season Total	113	Males	0	0.0	4	3.5	24	21.2	0	0.0	14	12.4	0	0.0	1	0.9	0	0.0	0	0.0	43	38.1
		Females	0	0.0	6	5.3	27	23.9	0	0.0	35	31.0	0	0.0	1	0.9	1	0.9	0	0.0	70	61.9
		Total	0	0.0	10	8.8	51	45.1	0	0.0	49	43.4	0	0.0	2	1.8	1	0.9	0	0.0	113	100.0
Mean Length		Males	-		541		778		-		871		-		1080		-		-			
Std. Error			-		25		14		-		22		-		-		-		-			
Mean Length		Females	-		627		758		-		847		-		750		885		-		-	
Std. Error			-		46		15		-		12		-		-		-		-		-	

*Note:* Yukon River Drainage Fisheries Association (YRDFA) collected these samples from Nulato.

<sup>a</sup> Sample dates are stratified by week.

**Appendix A10.**—Yukon River, Subdistrict 4-A (Koyukuk), Chinook salmon subsistence gillnet harvest age composition, 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total					
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)										
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%				
7/4, 6-7	46	Males	0	0.0	4	8.7	25	54.3	0	0.0	6	13.0	0	0.0	1	2.2	0	0.0	0	0.0	36	78.3
		Females	0	0.0	0	0.0	1	2.2	0	0.0	9	19.6	0	0.0	0	0.0	0	0.0	0	0.0	10	21.7
Season Total		Subtotal	0	0.0	4	8.7	26	56.5	0	0.0	15	32.6	0	0.0	1	2.2	0	0.0	0	0.0	46	100.0
Mean Length		Males	-		581		719		-		868		-		900		-		-		-	
Std. Error			-		23		13		-		40		-		-		-		-		-	
Mean Length		Females	-		-		805		-		901		-		-		-		-		-	
Std. Error			-		-		-		-		13		-		-		-		-		-	

*Note:* Yukon River Drainage Fisheries Association (YRDFA) collected these samples from Koyukuk.

<sup>a</sup> Sample dates are stratified by week.

**Appendix A11.**–Yukon River, Subdistricts 4-B, 4-C (Bishop Rock), Chinook salmon subsistence gillnet harvest age composition, 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total					
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)										
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%				
7/5-8	114	Males	0	0.0	3	2.6	39	34.2	0	0.0	10	8.8	2	1.8	0	0.0	1	0.9	0	0.0	55	48.2
		Females	0	0.0	0	0.0	17	14.9	0	0.0	34	29.8	0	0.0	4	3.5	4	3.5	0	0.0	59	51.8
		Subtotal	0	0.0	3	2.6	56	49.1	0	0.0	44	38.6	2	1.8	4	3.5	5	4.4	0	0.0	114	100.0
7/9, 12-15	66	Males	0	0.0	2	3.0	24	36.4	0	0.0	5	7.6	1	1.5	0	0.0	1	1.5	0	0.0	33	50.0
		Females	0	0.0	0	0.0	11	16.7	0	0.0	20	30.3	0	0.0	2	3.0	0	0.0	0	0.0	33	50.0
		Subtotal	0	0.0	2	3.0	35	53.0	0	0.0	25	37.9	1	1.5	2	3.0	1	1.5	0	0.0	66	100.0
Season Total	180	Males	0	0.0	5	2.8	63	35.0	0	0.0	15	8.3	3	1.7	0	0.0	2	1.1	0	0.0	88	48.9
		Females	0	0.0	0	0.0	28	15.6	0	0.0	54	30.0	0	0.0	6	3.3	4	2.2	0	0.0	92	51.1
		Total	0	0.0	5	2.8	91	50.6	0	0.0	69	38.3	3	1.7	6	3.3	6	3.3	0	0.0	180	100.0
Mean Length Std. Error	Males	-		550		767		-		831		848		-		923		-		-		
		-		17		7		-		12		34		-		28		-		-		
Mean Length Std. Error	Females	-		-		818		-		875		-		918		834		-		-		
		-		-		9		-		6		-		10		8		-		-		

Note: Yukon River Drainage Fisheries Association (YRDFA) collected these samples from Bishop Rock.

<sup>a</sup> Sample dates are stratified by week.

**Appendix A12.**–Yukon River, Subdistrict 4-C (Ruby), Chinook salmon subsistence gillnet harvest age composition, 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total					
			2003		2002		2001		2000		1999		1998									
			(1.1)		(1.2)		(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)								
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%						
7/7-8	17	Males	0	0.0	0	0.0	9	52.9	0	0.0	4	23.5	0	0.0	0	0.0	0	0.0	13	76.5		
		Females	0	0.0	0	0.0	0	0.0	0	0.0	4	23.5	0	0.0	0	0.0	0	0.0	4	23.5		
		Subtotal	0	0.0	0	0.0	9	52.9	0	0.0	8	47.1	0	0.0	0	0.0	0	0.0	17	100.0		
7/9-15	62	Males	0	0.0	8	12.9	24	38.7	0	0.0	4	6.5	1	1.6	0	0.0	0	0.0	0	0.0	37	59.7
		Females	0	0.0	1	1.6	4	6.5	0	0.0	20	32.3	0	0.0	0	0.0	0	0.0	0	0.0	25	40.3
		Subtotal	0	0.0	9	14.5	28	45.2	0	0.0	24	38.7	1	1.6	0	0.0	0	0.0	0	0.0	62	100.0
Season Total	79	Males	0	0.0	8	10.1	33	41.8	0	0.0	8	10.1	1	1.3	0	0.0	0	0.0	0	0.0	50	63.3
		Females	0	0.0	1	1.3	4	5.1	0	0.0	24	30.4	0	0.0	0	0.0	0	0.0	0	0.0	29	36.7
		Total	0	0.0	9	11.4	37	46.8	0	0.0	32	40.5	1	1.3	0	0.0	0	0.0	0	0.0	79	100.0
Mean Length		Males	-		592		719	-		816		750	-		-	-	-	-				
Std. Error			-		19		11	-		12		-	-		-	-	-	-				
Mean Length		Females	-		595		848	-		847		-	-		-	-	-	-				
Std. Error			-		-		12	-		12		-	-		-	-	-	-				

Note: Yukon River Drainage Fisheries Association (YRDFA) collected these samples from Ruby.

<sup>a</sup> Sample dates are stratified by week.



**Appendix A13.**–Yukon River, Big Eddy, Chinook salmon 8.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size	Brood Year (Age)														Total						
		2003		2002		2001		2000		1999		1998										
		(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	No.	%									
		No.	%	No.	%	No.	%	No.	%	No.	%			No.	%							
6/7-19, 20 Quartile 1	177	Males	0	0.0	8	4.5	84	47.5	0	0.0	18	10.2	0	0.0	1	0.6	0	0.0	0	0.0	111	62.7
		Females	0	0.0	0	0.0	19	10.7	0	0.0	47	26.6	0	0.0	0	0.0	0	0.0	0	0.0	66	37.3
		Subtotal	0	0.0	8	4.5	103	58.2	0	0.0	65	36.7	0	0.0	1	0.6	0	0.0	0	0.0	177	100.0
6/21-24 Quartile 2	114	Males	0	0.0	1	0.9	45	39.5	0	0.0	13	11.4	1	0.9	2	1.8	0	0.0	0	0.0	62	54.4
		Females	0	0.0	0	0.0	12	10.5	0	0.0	37	32.5	0	0.0	2	1.8	1	0.9	0	0.0	52	45.6
		Subtotal	0	0.0	1	0.9	57	50.0	0	0.0	50	43.9	1	0.9	4	3.5	1	0.9	0	0.0	114	100.0
6/25-28 Quartile 3	90	Males	0	0.0	3	3.3	29	32.2	0	0.0	10	11.1	0	0.0	0	0.0	0	0.0	0	0.0	42	46.7
		Females	0	0.0	0	0.0	13	14.4	0	0.0	32	35.6	0	0.0	3	3.3	0	0.0	0	0.0	48	53.3
		Subtotal	0	0.0	3	3.3	42	46.7	0	0.0	42	46.7	0	0.0	3	3.3	0	0.0	0	0.0	90	100.0
6/29-7/4, 6-9, 11, 14 Quartile 4	109	Males	0	0.0	1	0.9	25	22.9	0	0.0	8	7.3	0	0.0	0	0.0	0	0.0	0	0.0	34	31.2
		Females	0	0.0	0	0.0	24	22.0	0	0.0	50	45.9	0	0.0	0	0.0	1	0.9	0	0.0	75	68.8
		Subtotal	0	0.0	1	0.9	49	45.0	0	0.0	58	53.2	0	0.0	0	0.0	1	0.9	0	0.0	109	100.0
Season Total	490	Males	0	0.0	13	2.7	183	37.3	0	0.0	49	10.0	1	0.2	3	0.6	0	0.0	0	0.0	249	50.8
		Females	0	0.0	0	0.0	68	13.9	0	0.0	166	33.9	0	0.0	5	1.0	2	0.4	0	0.0	241	49.2
		Total	0	0.0	13	2.7	251	51.2	0	0.0	215	43.9	1	0.2	8	1.6	2	0.4	0	0.0	490	100.0
Mean Length Std. Error	Males	-		577		772		-		848		700		953		-		-				
		-		17		4		-		8		-		19		-		-				
Mean Length Std. Error	Females	-		-		819		-		862		-		901		845		-		-		
		-		-		5		-		4		-		19		40		-		-		
Mean Weight Std. Error	Males	-		7.4		16.7		-		22.0		10.5		30.7		-		-		-		
		-		0.7		0.3		-		0.8		-		1.6		-		-		-		
Mean Weight Std. Error	Females	-		-		19.8		-		23.0		-		24.4		21.7		-		-		
		-		-		0.4		-		0.3		-		1.4		3.9		-		-		
Mean Girth Std. Error	Males	-		359		468		-		515		398		577		-		-		-		
		-		11		3		-		7		-		2		-		-		-		
Mean Girth Std. Error	Females	-		-		505		-		526		-		542		518		-		-		
		-		-		5		-		3		-		12		48		-		-		

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

**Appendix A14.**–Yukon River, Middle Mouth, Chinook salmon 8.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total					
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	No.	%								
			No.	%	No.	%	No.	%	No.	%	No.	%			No.	%						
6/7-8, 10	154	Males	0	0.0	3	1.9	55	35.7	0	0.0	41	26.6	1	0.6	1	0.6	0	0.0	102	66.2		
12-18, 20		Females	0	0.0	0	0.0	22	14.3	0	0.0	30	19.5	0	0.0	0	0.0	0	0.0	52	33.8		
Quartile 1		Subtotal	0	0.0	3	1.9	77	50.0	0	0.0	71	46.1	1	0.6	1	0.6	0	0.0	154	100.0		
6/21-23	68	Males	0	0.0	2	2.9	21	30.9	0	0.0	6	8.8	0	0.0	1	1.5	0	0.0	0	0.0	30	44.1
Quartile 2		Females	0	0.0	0	0.0	15	22.1	0	0.0	21	30.9	0	0.0	2	2.9	0	0.0	0	0.0	38	55.9
		Subtotal	0	0.0	2	2.9	36	52.9	0	0.0	27	39.7	0	0.0	3	4.4	0	0.0	0	0.0	68	100.0
6/26-28	72	Males	0	0.0	2	2.8	22	30.6	0	0.0	12	16.7	0	0.0	1	1.4	0	0.0	0	0.0	37	51.4
Quartile 3		Females	0	0.0	0	0.0	12	16.7	0	0.0	22	30.6	0	0.0	1	1.4	0	0.0	0	0.0	35	48.6
		Subtotal	0	0.0	2	2.8	34	47.2	0	0.0	34	47.2	0	0.0	2	2.8	0	0.0	0	0.0	72	100.0
6/30,	203	Males	0	0.0	2	1.0	59	29.1	0	0.0	28	13.8	0	0.0	1	0.5	0	0.0	0	0.0	90	44.3
7/1-15		Females	0	0.0	0	0.0	42	20.7	0	0.0	67	33.0	0	0.0	3	1.5	1	0.5	0	0.0	113	55.7
Quartile 4		Subtotal	0	0.0	2	1.0	101	49.8	0	0.0	95	46.8	0	0.0	4	2.0	1	0.5	0	0.0	203	100.0
Season Total	497	Males	0	0.0	9	1.8	157	31.6	0	0.0	87	17.5	1	0.2	4	0.8	1	0.2	0	0.0	259	52.1
		Females	0	0.0	0	0.0	91	18.3	0	0.0	140	28.2	0	0.0	6	1.2	1	0.2	0	0.0	238	47.9
		Total	0	0.0	9	1.8	248	49.9	0	0.0	227	45.7	1	0.2	10	2.0	2	0.4	0	0.0	497	100.0
Mean Length		Males	-		573		769		-		838		830		870		880		-		-	
Std. Error			-		13		4		-		6		-		41		-		-		-	
Mean Length		Females	-		-		811		-		855		-		838		910		-		-	
Std. Error			-		-		4		-		3		-		8		-		-		-	
Mean Weight		Males	-		6.3		16.9		-		21.2		-		25.0		-		-		-	
Std. Error			-		0.4		0.3		-		0.6		-		3.7		-		-		-	
Mean Weight		Females	-		-		19.3		-		21.9		-		18.9		26.1		-		-	
Std. Error			-		-		0.3		-		0.3		-		1		-		-		-	
Mean Girth		Males	-		361		483		-		520		485		529		550		-		-	
Std. Error			-		11		3		-		5		-		19		-		-		-	
Mean Girth		Females	-		-		507		-		530		-		500		560		-		-	
Std. Error			-		-		4		-		3		-		14		-		-		-	

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

**Appendix A15.**—Yukon River, Big Eddy and Middle Mouth combined, Chinook salmon 8.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total							
			2003		2002		2001		2000		1999		1998											
			(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		No.	%
6/7-18, 20 Quartile 1	331	Males	0	0.0	11	3.3	139	42.0	0	0.0	59	17.8	1	0.3	2	0.6	1	0.3	0	0.0	0	0.0	213	64.4
		Females	0	0.0	0	0.0	41	12.4	0	0.0	77	23.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	118	35.6
		Subtotal	0	0.0	11	3.3	180	54.4	0	0.0	136	41.1	1	0.3	2	0.6	1	0.3	0	0.0	0	0.0	331	100.0
6/21-24 Quartile 2	182	Males	0	0.0	3	1.6	66	36.3	0	0.0	19	10.4	1	0.5	3	1.6	0	0.0	0	0.0	0	0.0	92	50.5
		Females	0	0.0	0	0.0	27	14.8	0	0.0	58	31.9	0	0.0	4	2.2	1	0.5	0	0.0	0	0.0	90	49.5
		Subtotal	0	0.0	3	1.6	93	51.1	0	0.0	77	42.3	1	0.5	7	3.8	1	0.5	0	0.0	0	0.0	182	100.0
6/25-28 Quartile 3	162	Males	0	0.0	5	3.1	51	31.5	0	0.0	22	13.6	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	79	48.8
		Females	0	0.0	0	0.0	25	15.4	0	0.0	54	33.3	0	0.0	4	2.5	0	0.0	0	0.0	0	0.0	83	51.2
		Subtotal	0	0.0	5	3.1	76	46.9	0	0.0	76	46.9	0	0.0	5	3.1	0	0.0	0	0.0	0	0.0	162	100.0
6/29-30, 7/1-15 Quartile 4	312	Males	0	0.0	3	1.0	84	26.9	0	0.0	36	11.5	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	124	39.7
		Females	0	0.0	0	0.0	66	21.2	0	0.0	117	37.5	0	0.0	3	1.0	2	0.6	0	0.0	0	0.0	188	60.3
		Subtotal	0	0.0	3	1.0	150	48.1	0	0.0	153	49.0	0	0.0	4	1.3	2	0.6	0	0.0	0	0.0	312	100.0
Season Total	987	Males	0	0.0	22	2.2	340	34.4	0	0.0	136	13.8	2	0.2	7	0.7	1	0.1	0	0.0	0	0.0	508	51.5
		Females	0	0.0	0	0.0	159	16.1	0	0.0	306	31.0	0	0.0	11	1.1	3	0.3	0	0.0	0	0.0	479	48.5
		Total	0	0.0	22	2.2	499	50.6	0	0.0	442	44.8	2	0.2	18	1.8	4	0.4	0	0.0	0	0.0	987	100.0
Mean Length Std. Error	Males		-		575		771		-		842		765		906		880		-		-			
			-		11		3		-		5		65		29		-		-		-			
Mean Length Std. Error	Females		-		-		814		-		859		-		867		867		-		-			
			-		-		3		-		2		-		13		32		-		-			
Mean Weight Std. Error	Males		-		7.1		16.8		-		21.5		10.5		27.8		-		-		-			
			-		0.5		0.2		-		0.5		-		2.2		-		-		-			
Mean Weight Std. Error	Females		-		-		19.5		-		22.6		-		21.1		23.2		-		-			
			-		-		0.3		-		0.2		-		1.2		2.7		-		-			
Mean Girth Std. Error	Males		-		360		475		-		518		442		549		550		-		-			
			-		8		2		-		4		44		14		-		-		-			
Mean Girth Std. Error	Females		-		-		506		-		528		-		519		532		-		-			
			-		-		3		-		2		-		11		31		-		-			

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

**Appendix A16.**–Yukon River, Big Eddy, Chinook salmon 8.25-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total					
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	No.	%								
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%						
6/7, 13-18, 20 Quartile 1	37	Males	0	0.0	0	0.0	14	37.8	0	0.0	7	18.9	0	0.0	0	0.0	0	0.0	0	0.0	21	56.8
		Females	0	0.0	0	0.0	6	16.2	0	0.0	9	24.3	0	0.0	1	2.7	0	0.0	0	0.0	16	43.2
		Subtotal	0	0.0	0	0.0	20	54.1	0	0.0	16	43.2	0	0.0	1	2.7	0	0.0	0	0.0	37	100.0
6/21-24 Quartile 2	23	Males	0	0.0	0	0.0	5	21.7	0	0.0	3	13.0	0	0.0	0	0.0	0	0.0	0	0.0	8	34.8
		Females	0	0.0	0	0.0	1	4.3	0	0.0	13	56.5	0	0.0	1	4.3	0	0.0	0	0.0	15	65.2
		Subtotal	0	0.0	0	0.0	6	26.1	0	0.0	16	69.6	0	0.0	1	4.3	0	0.0	0	0.0	23	100.0
6/25-28 Quartile 3	24	Males	0	0.0	2	8.3	4	16.7	0	0.0	4	16.7	0	0.0	0	0.0	0	0.0	0	0.0	10	41.7
		Females	0	0.0	0	0.0	3	12.5	0	0.0	11	45.8	0	0.0	0	0.0	0	0.0	0	0.0	14	58.3
		Subtotal	0	0.0	2	8.3	7	29.2	0	0.0	15	62.5	0	0.0	0	0.0	0	0.0	0	0.0	24	100.0
6/29, 7/1-3, 10-11 Quartile 4	9	Males	0	0.0	0	0.0	2	22.2	0	0.0	1	11.1	0	0.0	0	0.0	0	0.0	0	0.0	3	33.3
		Females	0	0.0	0	0.0	1	11.1	0	0.0	4	44.4	0	0.0	0	0.0	1	11.1	0	0.0	6	66.7
		Subtotal	0	0.0	0	0.0	3	33.3	0	0.0	5	55.6	0	0.0	0	0.0	1	11.1	0	0.0	9	100.0
Season Total	93	Males	0	0.0	2	2.2	25	26.9	0	0.0	15	16.1	0	0.0	0	0.0	0	0.0	0	0.0	42	45.2
		Females	0	0.0	0	0.0	11	11.8	0	0.0	37	39.8	0	0.0	2	2.2	1	1.1	0	0.0	51	54.8
		Total	0	0.0	2	2.2	36	38.7	0	0.0	52	55.9	0	0.0	2	2.2	1	1.1	0	0.0	93	100.0
Mean Length Std. Error	Males	-		573		758		-		842		-		-		-		-		-		
		-		3		11		-		19		-		-		-		-		-		
Mean Length Std. Error	Females	-		-		783		-		846		-		893		805		-		-		
		-		-		28		-		8		-		53		-		-		-		
Mean Weight Std. Error	Males	-		7.5		15.8		-		21.7		-		-		-		-		-		
		-		0.3		0.7		-		1.7		-		-		-		-		-		
Mean Weight Std. Error	Females	-		-		19.5		-		21.8		-		22.0		18.0		-		-		
		-		-		0.9		-		0.8		-		4.2		-		-		-		
Mean Girth Std. Error	Males	-		378		466		-		519		-		-		-		-		-		
		-		3		8		-		14		-		-		-		-		-		
Mean Girth Std. Error	Females	-		-		508		-		515		-		513		470		-		-		
		-		-		9		-		7		-		28		-		-		-		

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

**Appendix A17.**–Yukon River, Middle Mouth, Chinook salmon 8.25-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)																Total			
			2003		2002		2001		2000		1999		1998									
			(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/13-18, 20 Quartile 1	14	Males	0	0.0	0	0.0	4	28.6	0	0.0	3	21.4	0	0.0	0	0.0	0	0.0	0	0.0	7	50.0
		Females	0	0.0	0	0.0	1	7.1	0	0.0	6	42.9	0	0.0	0	0.0	0	0.0	0	0.0	7	50.0
		Subtotal	0	0.0	0	0.0	5	35.7	0	0.0	9	64.3	0	0.0	0	0.0	0	0.0	0	0.0	14	100.0
6/22-23 Quartile 2	12	Males	0	0.0	0	0.0	4	33.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	33.3
		Females	0	0.0	0	0.0	0	0.0	0	0.0	8	66.7	0	0.0	0	0.0	0	0.0	0	0.0	8	66.7
		Subtotal	0	0.0	0	0.0	4	33.3	0	0.0	8	66.7	0	0.0	0	0.0	0	0.0	0	0.0	12	100.0
6/26-28 Quartile 3	5	Males	0	0.0	0	0.0	1	20.0	0	0.0	1	20.0	0	0.0	0	0.0	0	0.0	0	0.0	2	40.0
		Females	0	0.0	0	0.0	1	20.0	0	0.0	2	40.0	0	0.0	0	0.0	0	0.0	0	0.0	3	60.0
		Subtotal	0	0.0	0	0.0	2	40.0	0	0.0	3	60.0	0	0.0	0	0.0	0	0.0	0	0.0	5	100.0
7/2-3, 6, 9 Quartile 4	6	Males	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	16.7
		Females	0	0.0	0	0.0	0	0.0	0	0.0	5	83.3	0	0.0	0	0.0	0	0.0	0	0.0	5	83.3
		Subtotal	0	0.0	0	0.0	1	16.7	0	0.0	5	83.3	0	0.0	0	0.0	0	0.0	0	0.0	6	100.0
Season Total	37	Males	0	0.0	0	0.0	10	27.0	0	0.0	4	10.8	0	0.0	0	0.0	0	0.0	0	0.0	14	37.8
		Females	0	0.0	0	0.0	2	5.4	0	0.0	21	56.8	0	0.0	0	0.0	0	0.0	0	0.0	23	62.2
		Total	0	0.0	0	0.0	12	32.4	0	0.0	25	67.6	0	0.0	0	0.0	0	0.0	0	0.0	37	100.0
Mean Length Std. Error	Males	-	-	772	-	799	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	19	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mean Length Std. Error	Females	-	-	795	-	855	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	0	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mean Weight Std. Error	Males	-	-	17.6	-	18.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mean Weight Std. Error	Females	-	-	19.1	-	21.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	-	-	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mean Girth Std. Error	Males	-	-	500	-	475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	11	-	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mean Girth Std. Error	Females	-	-	500	-	530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	25	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

**Appendix A18.**–Yukon River, Big Eddy and Middle Mouth combined, Chinook salmon 8.25-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), mean weight (lbs), and mean girth (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)																Total			
			2003		2002		2001		2000		1999		1998									
			(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/7, 13-18, 20 Quartile 1	51	Males	0	0.0	0	0.0	18	35.3	0	0.0	10	19.6	0	0.0	0	0.0	0	0.0	0	0.0	28	54.9
		Females	0	0.0	0	0.0	7	13.7	0	0.0	15	29.4	0	0.0	1	2.0	0	0.0	0	0.0	23	45.1
		Subtotal	0	0.0	0	0.0	25	49.0	0	0.0	25	49.0	0	0.0	1	2.0	0	0.0	0	0.0	51	100.0
6/21-24 Quartile 2	35	Males	0	0.0	0	0.0	9	25.7	0	0.0	3	8.6	0	0.0	0	0.0	0	0.0	0	0.0	12	34.3
		Females	0	0.0	0	0.0	1	2.9	0	0.0	21	60.0	0	0.0	1	2.9	0	0.0	0	0.0	23	65.7
		Subtotal	0	0.0	0	0.0	10	28.6	0	0.0	24	68.6	0	0.0	1	2.9	0	0.0	0	0.0	35	100.0
6/25-28 Quartile 3	29	Males	0	0.0	2	6.9	5	17.2	0	0.0	5	17.2	0	0.0	0	0.0	0	0.0	0	0.0	12	41.4
		Females	0	0.0	0	0.0	4	13.8	0	0.0	13	44.8	0	0.0	0	0.0	0	0.0	0	0.0	17	58.6
		Subtotal	0	0.0	2	6.9	9	31.0	0	0.0	18	62.1	0	0.0	0	0.0	0	0.0	0	0.0	29	100.0
6/29, 7/1-3, 6, 9-11 Quartile 4	15	Males	0	0.0	0	0.0	3	20.0	0	0.0	1	6.7	0	0.0	0	0.0	0	0.0	0	0.0	4	26.7
		Females	0	0.0	0	0.0	1	6.7	0	0.0	9	60.0	0	0.0	0	0.0	1	6.7	0	0.0	11	73.3
		Subtotal	0	0.0	0	0.0	4	26.7	0	0.0	10	66.7	0	0.0	0	0.0	1	6.7	0	0.0	15	100.0
Season Total	130	Males	0	0.0	2	1.5	35	26.9	0	0.0	19	14.6	0	0.0	0	0.0	0	0.0	0	0.0	56	43.1
		Females	0	0.0	0	0.0	13	10.0	0	0.0	58	44.6	0	0.0	2	1.5	1	0.8	0	0.0	74	56.9
		Total	0	0.0	2	1.5	48	36.9	0	0.0	77	59.2	0	0.0	2	1.5	1	0.8	0	0.0	130	100.0
Mean Length		Males	-		573		762	-	833	-	-	-	-	-	-	-	-	-	-	-	-	-
Std. Error			-		3		9	-	16	-	-	-	-	-	-	-	-	-	-	-	-	
Mean Length		Females	-		-		785	-	849	-	893	805	-	-	-	-	-	-	-	-	-	-
Std. Error			-		-		24	-	6	-	53	-	-	-	-	-	-	-	-	-	-	
Mean Weight		Males	-		7.5		16.2	-	21.6	-	-	-	-	-	-	-	-	-	-	-	-	-
Std. Error			-		0.3		0.6	-	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean Weight		Females	-		-		19.5	-	21.2	-	22.0	18.0	-	-	-	-	-	-	-	-	-	-
Std. Error			-		-		0.8	-	0.7	-	4.2	-	-	-	-	-	-	-	-	-	-	-
Mean Girth		Males	-		378		476	-	510	-	-	-	-	-	-	-	-	-	-	-	-	-
Std. Error			-		3		7	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean Girth		Females	-		-		507	-	521	-	513	470	-	-	-	-	-	-	-	-	-	-
Std. Error			-		-		8	-	6	-	28	-	-	-	-	-	-	-	-	-	-	-

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

**Appendix A19.**—Yukon River, Marshall, Chinook salmon 8.25-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)																		Total			
			2003		2002		2001		2000		1999		1998											
			(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		No.	%
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/12-21 Quartile 1	87	Males	0	0.0	1	1.1	38	43.8	0	0.0	15	17.2	1	1.1	0	0.0	0	0.0	0	0.0	0	0.0	55	63.2
		Females	0	0.0	0	0.0	10	11.5	0	0.0	22	25.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	32	36.8
		Subtotal	0	0.0	1	1.1	48	55.3	0	0.0	37	42.5	1	1.1	0	0.0	0	0.0	0	0.0	0	0.0	87	100.0
6/22-26 Quartile 2	65	Males	0	0.0	0	0.0	29	44.6	0	0.0	4	6.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	33	50.8
		Females	0	0.0	0	0.0	16	24.6	0	0.0	16	24.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	32	49.2
		Subtotal	0	0.0	0	0.0	45	69.2	0	0.0	20	30.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	65	100.0
6/27-7/1 Quartile 3	90	Males	0	0.0	0	0.0	22	24.4	0	0.0	10	11.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	32	35.5
		Females	0	0.0	0	0.0	18	20.0	0	0.0	40	44.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	58	64.5
		Subtotal	0	0.0	0	0.0	40	44.4	0	0.0	50	55.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	90	100.0
7/2-7/15 Quartile 4	67	Males	0	0.0	0	0.0	19	28.4	0	0.0	5	7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	24	35.9
		Females	0	0.0	0	0.0	9	13.4	0	0.0	34	50.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	43	64.1
		Subtotal	0	0.0	0	0.0	28	41.8	0	0.0	39	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	67	100.0
Season Total	309	Males	0	0.0	1	0.3	108	35.1	0	0.0	34	11.1	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	145	46.8
		Females	0	0.0	0	0.0	53	17.1	0	0.0	112	36.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	164	53.2
		Total	0	0.0	1	0.3	161	52.2	0	0.0	146	47.2	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	309	100.0
Mean Length Std. Error	Males	-		585		761		-		864		710		-		-		-		-				
		-		-		5		-		15		-		-		-		-		-				
Mean Length Std. Error	Females	-		-		824		-		865		-		-		-		-		-				
		-		-		6		-		5		-		-		-		-		-				

<sup>a</sup> Sample dates were stratified by quartiles based on the Marshall 8.25-inch mesh drift gillnet catch totals.

**Appendix A20.**–Yukon River, Pilot Station sonar, Chinook salmon variable mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates Mesh Size			Sample Size			Brood Year (Age)														Total	
						2003		2002		2001		2000		1999		1998					
						(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	No.	%				
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
6/30-7/5 Mesh Size 2.75-inch	4	Males	0	0.0	1	25.0	2	50.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	75.0	
		Females	0	0.0	1	25.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	25.0	
		Subtotal	0	0.0	2	50.0	2	50.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	100.0	
Mean Length		Males	-		380		766		-		-		-		-		-				
Std. Error			-		-		13		-		-		-		-		-				
Mean Length		Females	-		586		-		-		-		-		-		-				
Std. Error			-		-		-		-		-		-		-		-				
6/14 - 7/15 Mesh Size 4.0-inch	31	Males	0	0.0	4	12.9	10	32.3	0	0.0	4	12.9	0	0.0	0	0.0	0	0.0	18	58.1	
		Females	0	0.0	0	0.0	8	25.8	0	0.0	5	16.1	0	0.0	0	0.0	0	0.0	13	41.9	
		Subtotal	0	0.0	4	12.9	18	58.1	0	0.0	9	29.0	0	0.0	0	0.0	0	0.0	31	100.0	
Mean Length		Males	-		522		700		-		810		-		-		-				
Std. Error			-		16		23		-		60		-		-		-				
Mean Length		Females	-		-		717		-		798		-		-		-				
Std. Error			-		-		29		-		30		-		-		-				
7/26 Mesh Size 5.0-inch	2	Males	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	100.0	
		Females	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
		Subtotal	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	100.0	
Mean Length		Males	-		-		741		-		-		-		-		-				
Std. Error			-		-		26		-		-		-		-		-				
Mean Length		Females	-		-		-		-		-		-		-		-				
Std. Error			-		-		-		-		-		-		-		-				
6/16 - 7/9 Mesh Size 5.25-inch	17	Males	0	0.0	4	23.5	8	47.1	0	0.0	1	5.9	0	0.0	0	0.0	0	0.0	13	76.5	
		Females	0	0.0	1	5.9	1	5.9	0	0.0	2	11.8	0	0.0	0	0.0	0	0.0	4	23.5	
		Subtotal	0	0.0	5	29.4	9	52.9	0	0.0	3	17.6	0	0.0	0	0.0	0	0.0	17	100.0	
Mean Length		Males	-		559		739		-		800		-		-		-				
Std. Error			-		8		20		-		-		-		-		-				
Mean Length		Females	-		566		620		-		810		-		-		-				
Std. Error			-		-		-		-		11		-		-		-				
7/21 Mesh Size 5.75-inch	2	Males	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	50.0	
		Females	0	0.0	0	0.0	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	0	0.0	1	50.0	
		Subtotal	0	0.0	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	0	0.0	0	0.0	2	100.0	
Mean Length		Males	-		-		682		-		-		-		-		-				
Std. Error			-		-		-		-		-		-		-		-				
Mean Length		Females	-		-		-		-		841		-		-		-				
Std. Error			-		-		-		-		-		-		-		-				

-continued-



Appendix A20.—Page 2 of 2.

Sample Dates Mesh Size			Sample Size			Brood Year (Age)														Total	
						2003		2002		2001		2000		1999		1998					
						(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	No.	%				
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
6/9 - 7/17 Mesh Size 6.50-inch	104	Males	0	0.0	6	5.8	52	50.0	0	0.0	11	10.6	1	1.0	1	1.0	0	0.0	71	68.3	
		Females	0	0.0	2	1.9	16	15.4	0	0.0	15	14.4	0	0.0	0	0.0	0	0.0	33	31.7	
		Subtotal	0	0.0	8	7.7	68	65.4	0	0.0	26	25.0	1	1.0	1	1.0	0	0.0	104	100.0	
Mean Length		Males	-		611		705		-		790		684		-		-		-		
Std. Error			-		33		8		-		21		-		-		-		-		
Mean Length		Females	-		571		729		-		822		-		950		-		-		
Std. Error			-		19		15		-		15		-		-		-		-		
6/7 - 8/5 Mesh Size 7.50-inch	237	Males	0	0.0	7	3.0	99	41.8	0	0.0	43	18.1	1	0.4	0	0.0	0	0.0	150	63.3	
		Females	0	0.0	0	0.0	41	17.3	0	0.0	45	19.0	1	0.4	0	0.0	0	0.0	87	36.7	
		Subtotal	0	0.0	7	3.0	140	59.1	0	0.0	88	37.1	2	0.8	0	0.0	0	0.0	237	100.0	
Mean Length		Males	-		562		736		-		814		782		-		-		-		
Std. Error			-		15		6		-		10		-		-		-		-		
Mean Length		Females	-		-		744		-		812		701		-		-		-		
Std. Error			-		-		9		-		10		-		-		-		-		
6/8 - 7/18 Mesh Size 8.50-inch	108	Males	0	0.0	2	1.9	36	33.3	0	0.0	25	23.1	0	0.0	0	0.0	0	0.0	63	58.3	
		Females	0	0.0	0	0.0	17	15.7	0	0.0	27	25.0	0	0.0	1	0.9	0	0.0	45	41.7	
		Subtotal	0	0.0	2	1.9	53	49.1	0	0.0	52	48.1	0	0.0	1	0.9	0	0.0	108	100.0	
Mean Length		Males	-		490		731		-		827		-		-		-		-		
Std. Error			-		9		10		-		15		-		-		-		-		
Mean Length		Females	-		-		754		-		838		-		900		-		-		
Std. Error			-		-		19		-		9		-		-		-		-		
Season Total <sup>a</sup> Combined Mesh	505	Males	0	0.0	24	4.8	210	41.6	0	0.0	84	16.6	2	0.4	1	0.2	0	0.0	321	63.6	
		Females	0	0.0	4	0.8	83	16.4	0	0.0	95	18.8	1	0.2	1	0.2	0	0.0	184	36.4	
		Total	0	0.0	28	5.5	293	58.0	0	0.0	179	35.4	3	0.6	2	0.4	0	0.0	505	100.0	
Mean Length		Males	-		553		726		-		814		733		950		-		-		
Std. Error			-		14		4		-		8		49		-		-		-		
Mean Length		Females	-		573		739		-		820		701		900		-		-		
Std. Error			-		9		7		-		6		-		-		-		-		

<sup>a</sup> The season total percentages by age group were based on sample size and does not indicate the age composition of the run passage by Pilot Station sonar.

**Appendix A21.**—Yukon River, Eagle sonar, Chinook salmon variable mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

		Brood Year (Age)																						
Sample Dates	Sample Size		2003		2002		2001		2000		1999		1998		Total									
			(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		No.	%
7/30 - 8/5	6	Males	0	0.0	3	50.0	1	16.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	66.7
Mesh Size 2.75-inch		Females	0	0.0	1	16.7	1	16.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	33.3
		Subtotal	0	0.0	4	66.7	2	33.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	100.0
Mean Length		Males	-		578		710	-		-		-		-		-		-		-		-		
Std. Error			-		25		-	-		-		-		-		-		-		-		-		
Mean Length		Females	-		580		670	-		-		-		-		-		-		-		-		
Std. Error			-		-		-	-		-		-		-		-		-		-		-		
7/28 - 8/7	8	Males	0	0.0	0	0.0	8	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	100.0
Mesh Size 4.0-inch		Females	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		Subtotal	0	0.0	0	0.0	8	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	100.0
Mean Length		Males	-		-		738	-		-		-		-		-		-		-		-		
Std. Error			-		-		22	-		-		-		-		-		-		-		-		
Mean Length		Females	-		-		-	-		-		-		-		-		-		-		-		
Std. Error			-		-		-	-		-		-		-		-		-		-		-		
7/11 - 9/11	127	Males	0	0.0	24	18.9	60	47.2	0	0.0	4	3.1	2	1.6	0	0.0	0	0.0	0	0.0	0	0.0	90	70.9
Mesh Size 5.25-inch		Females	0	0.0	5	3.9	18	14.2	0	0.0	12	9.4	1	0.8	0	0.0	1	0.8	0	0.0	0	0.0	37	29.1
		Subtotal	0	0.0	29	22.8	78	61.4	0	0.0	16	12.6	3	2.4	0	0.0	1	0.8	0	0.0	0	0.0	127	100.0
Mean Length		Males	-		589		721	-		909		608		-		-		-		-		-		
Std. Error			-		13		8	-		37		83		-		-		-		-		-		
Mean Length		Females	-		632		740	-		834		685		-		830		-		-		-		
Std. Error			-		30		19	-		14		-		-		-		-		-		-		
7/10 - 8/23	113	Males	0	0.0	4	3.5	42	37.2	0	0.0	9	8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	55	48.7
Mesh Size 7.50-inch		Females	0	0.0	6	5.3	23	20.4	0	0.0	28	24.8	1	0.9	0	0.0	0	0.0	0	0.0	0	0.0	58	51.3
		Subtotal	0	0.0	10	8.8	65	57.5	0	0.0	37	32.7	1	0.9	0	0.0	0	0.0	0	0.0	0	0.0	113	100.0
Mean Length		Males	-		635		751	-		849		-		-		-		-		-		-		
Std. Error			-		52		9	-		22		-		-		-		-		-		-		
Mean Length		Females	-		622		768	-		834		830		-		-		-		-		-		
Std. Error			-		36		14	-		9		-		-		-		-		-		-		
Season Total <sup>a</sup>	254	Males	0	0.0	31	12.2	111	43.7	0	0.0	13	5.1	2	0.8	0	0.0	0	0.0	0	0.0	0	0.0	157	61.8
Combined Mesh		Females	0	0.0	12	4.7	42	16.5	0	0.0	40	15.7	2	0.8	0	0.0	1	0.4	0	0.0	0	0.0	97	38.2
		Total	0	0.0	43	16.9	153	60.2	0	0.0	53	20.9	4	1.6	0	0.0	1	0.4	0	0.0	0	0.0	254	100.0
Mean Length		Males	-		594		734	-		868		608		-		-		-		-		-		
Std. Error			-		12		6	-		20		83		-		-		-		-		-		
Mean Length		Females	-		623		754	-		834		758		-		830		-		-		-		
Std. Error			-		21		12	-		7		73		-		-		-		-		-		

<sup>a</sup> The season total percentages by age group were based on sample size and does not indicate the age composition of the run passage by Eagle sonar.

**Appendix A22.**–Yukon River, Canada, Sheep Rock and White Rock, Chinook salmon fish wheel test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)														Total			
			2003		2002		2001		2000		1999		1998							
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)								
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
7/4-21 Quartile 1	196	Males	0	0.0	31	15.8	110	56.1	1	0.5	14	7.1	0	0.0	0	0.0	0	0.0	156	79.6
		Females	0	0.0	0	0.0	17	8.7	0	0.0	22	11.2	0	0.0	1	0.5	0	0.0	40	20.4
		Subtotal	0	0.0	31	15.8	127	64.8	1	0.5	36	18.4	0	0.0	1	0.5	0	0.0	196	100.0
7/22-28 Quartile 2	170	Males	0	0.0	28	16.5	83	48.8	1	0.6	7	4.1	0	0.0	0	0.0	0	0.0	119	70.0
		Females	0	0.0	0	0.0	21	12.4	0	0.0	30	17.6	0	0.0	0	0.0	0	0.0	51	30.0
		Subtotal	0	0.0	28	16.5	104	61.2	1	0.6	37	21.8	0	0.0	0	0.0	0	0.0	170	100.0
7/29-8/1 Quartile 3	213	Males	0	0.0	50	23.5	99	46.5	0	0.0	13	6.1	0	0.0	0	0.0	0	0.0	162	76.1
		Females	0	0.0	0	0.0	17	8.0	0	0.0	33	15.5	0	0.0	1	0.5	0	0.0	51	23.9
		Subtotal	0	0.0	50	23.5	116	54.5	0	0.0	46	21.6	0	0.0	1	0.5	0	0.0	213	100.0
8/2-10 Quartile 4	156	Males	0	0.0	39	25.0	66	42.3	0	0.0	3	1.9	0	0.0	0	0.0	0	0.0	108	69.2
		Females	0	0.0	1	0.6	22	14.1	0	0.0	25	16.0	0	0.0	0	0.0	0	0.0	48	30.8
		Subtotal	0	0.0	40	25.6	88	56.4	0	0.0	28	17.9	0	0.0	0	0.0	0	0.0	156	100.0
Season Total	735	Males	0	0.0	148	20.1	358	48.7	2	0.3	37	5.0	0	0.0	0	0.0	0	0.0	545	74.1
		Females	0	0.0	1	0.1	77	10.5	0	0.0	110	15.0	0	0.0	2	0.3	0	0.0	190	25.9
		Subtotal	0	0.0	149	20.3	435	59.2	2	0.3	147	20.0	0	0.0	2	0.3	0	0.0	735	100.0
Mean Length <sup>b</sup> Std. Error	Males	-		615		759		660		871		-		-		-				
		-		6		4		20		19		-		-		-				
Mean Length Std. Error	Females	-		850		837		-		878		-		930		-		-		
		-		-		7		-		6		-		140		-		-		

Note: Samples were collected by the Canadian Department of Fisheries and Oceans (DFO).

<sup>a</sup> Sample dates were stratified by quartiles based on number sampled.

<sup>b</sup> Length type measured was tip-of-snout to fork-of-tail.

**Appendix A23.**—Andreafsky River (East Fork) weir, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates (Strata Dates)	Sample Size		Brood Year (Age)																Total	
			2003		2002		2001		2000		1999		1998							
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)								
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
6/29-30, 7/3-8 (6/29-7/8)	141	Males	0	0.0	153	7.8	614	31.2	0	0.0	182	9.2	0	0.0	0	0.0	0	0.0	949	48.2
		Females	0	0.0	84	4.3	405	20.5	0	0.0	530	27.0	0	0.0	0	0.0	0	0.0	1,019	51.8
		Subtotal	0	0.0	237	12.1	1019	51.7	0	0.0	712	36.2	0	0.0	0	0.0	0	0.0	1,968	100.0
7/9-13, 16-17 (7/9-18)	183	Males	0	0.0	580	16.4	1393	39.3	0	0.0	252	7.1	0	0.0	0	0.0	0	0.0	2,225	62.8
		Females	0	0.0	78	2.2	561	15.9	0	0.0	676	19.1	0	0.0	0	0.0	0	0.0	1,315	37.2
		Subtotal	0	0.0	658	18.6	1954	55.2	0	0.0	928	26.2	0	0.0	0	0.0	0	0.0	3,540	100.0
7/21-27 (7/19-27)	130	Males	0	0.0	184	19.2	331	34.6	0	0.0	22	2.3	0	0.0	0	0.0	0	0.0	537	56.1
		Females	0	0.0	22	2.3	242	25.4	0	0.0	154	16.2	0	0.0	0	0.0	0	0.0	418	43.9
		Subtotal	0	0.0	206	21.5	573	60.0	0	0.0	176	18.5	0	0.0	0	0.0	0	0.0	955	100.0
Season Total	454	Males	0	0.0	917	14.2	2338	36.2	0	0.0	456	7.0	0	0.0	0	0.0	0	0.0	3,711	57.4
		Females	0	0.0	184	2.8	1208	18.7	0	0.0	1360	21.1	0	0.0	0	0.0	0	0.0	2,752	42.6
		Total	0	0.0	1101	17.0	3,546	54.9	0	0.0	1816	28.1	0	0.0	0	0.0	0	0.0	6,463	100.0
Mean Length Std. Error	Males	-		563		708		-		797		-		-		-		-		
		-		7		4		-		19		-		-		-		-		
Mean Length Std. Error	Females	-		588		740		-		827		-		-		-		-		
		-		9		7		-		6		-		-		-		-		

Note: Samples were collected by the US Fish and Wildlife Service (USFWS).

**Appendix A24.**—Anvik River carcass survey, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.

		Brood Year (Age)																						
Sample Dates	Sample Size		2003		2002		2001		2000				1999		1998				Total					
			(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/31-8/2, 5-7	169	Males	0	0.0	18	10.7	67	39.6	0	0.0	11	6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	96	56.8
		Females	0	0.0	0	0.0	14	8.3	0	0.0	59	34.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	73	43.2
Season Total <sup>a</sup>		Total	0	0.0	18	10.7	81	47.9	0	0.0	70	41.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	169	100.0
Mean Length		Males	-		536		666		-		765		-		-		-		-		-		-	
Std. Error			-		14		7		-		23		-		-		-		-		-		-	
Mean Length		Females	-		-		714		-		800		-		-		-		-		-		-	
Std. Error			-		-		8		-		6		-		-		-		-		-		-	

<sup>a</sup> The numbers of fish in each age group were based on sample size and do not indicate the Anvik River run passage composition.

**Appendix A25.**—Chena River carcass survey, Chinook salmon project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)												Total					
			2003		2002		2001		2000		1999		1998							
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	No.	%						
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%				
7/26 28-8/5	114	Males	0	0.0	11	9.6	46	40.4	0	0.0	4	3.5	0	0.0	1	0.9	0	0.0	62	54.4
		Females	0	0.0	0	0.0	16	14.0	0	0.0	36	31.6	0	0.0	0	0.0	0	0.0	52	45.6
		Subtotal	0	0.0	11	9.6	62	54.4	0	0.0	40	35.1	0	0.0	1	0.9	0	0.0	114	100.0
8/6-9	137	Males	0	0.0	24	17.5	37	27.0	0	0.0	7	5.1	1	0.7	1	0.8	0	0.0	70	51.1
		Females	0	0.0	0	0.0	20	14.6	0	0.0	46	33.6	0	0.0	1	0.7	0	0.0	67	48.9
		Subtotal	0	0.0	24	17.5	57	41.6	0	0.0	53	38.7	1	0.7	2	1.5	0	0.0	137	100.0
8/10-12, 15	111	Males	0	0.0	11	9.9	33	29.8	1	0.9	18	16.2	0	0.0	1	0.9	0	0.0	64	57.7
		Females	0	0.0	0	0.0	12	10.8	0	0.0	35	31.5	0	0.0	0	0.0	0	0.0	47	42.3
		Subtotal	0	0.0	11	9.9	45	40.6	1	0.9	53	47.7	0	0.0	1	0.9	0	0.0	111	100.0
Season Total <sup>a</sup>	362	Males	0	0.0	46	12.7	116	32.0	1	0.3	29	8.0	1	0.3	3	0.8	0	0.0	196	54.1
		Females	0	0.0	0	0.0	48	13.3	0	0.0	117	32.3	0	0.0	1	0.3	0	0.0	166	45.9
		Total	0	0.0	46	12.7	164	45.3	1	0.3	146	40.3	1	0.3	4	1.1	0	0.0	362	100.0
Mean Length Std. Error	Males	-		566		723		550		854		750		908		-		-		
		-		7		7		-		18		-		-		-		-		
Mean Length Std. Error	Females	-		-		789		-		862		-		860		-		-		
		-		-		7		-		5		-		-		-		-		

<sup>a</sup> The numbers of fish in each age group were based on sample size and do not indicate the Chena River run passage composition.

**Appendix A26.**–Gisasa River weir, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup> (Strata Dates)	Sample Size		Brood Year (Age)																Total			
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)					No.	%				
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%				
7/9-12 (6/29-7/12)	108	Males	0	0.0	132	11.1	662	55.6	0	0.0	22	1.8	0	0.0	0	0.0	0	0.0	0	0.0	816	68.5
		Females	0	0.0	55	4.6	210	17.6	0	0.0	110	9.3	0	0.0	0	0.0	0	0.0	0	0.0	375	31.5
		Subtotal	0	0.0	187	15.7	872	73.2	0	0.0	132	11.1	0	0.0	0	0.0	0	0.0	0	0.0	1,191	100.0
7/13-14, 16,17 (7/13-18)	195	Males	0	0.0	154	12.8	703	58.5	0	0.0	62	5.1	13	1.0	0	0.0	0	0.0	0	0.0	932	77.4
		Females	0	0.0	87	7.2	111	9.2	0	0.0	68	5.7	6	0.5	0	0.0	0	0.0	0	0.0	272	22.6
		Subtotal	0	0.0	241	20.0	814	67.7	0	0.0	130	10.8	19	1.5	0	0.0	0	0.0	0	0.0	1,204	100.0
7/19-23 (7/19-23)	101	Males	0	0.0	80	25.7	113	36.6	0	0.0	6	2.0	0	0.0	3	1.0	0	0.0	0	0.0	202	65.3
		Females	3	1.0	9	3.0	34	10.9	0	0.0	58	18.8	0	0.0	0	0.0	3	1.0	0	0.0	107	34.7
		Subtotal	3	1.0	89	28.7	147	47.5	0	0.0	64	20.8	0	0.0	3	1.0	3	1.0	0	0.0	309	100.0
7/24-29 (7/24-29)	126	Males	0	0.0	19	12.7	70	47.6	0	0.0	8	5.6	0	0.0	0	0.0	0	0.0	0	0.0	97	65.9
		Females	0	0.0	2	1.6	12	8.0	0	0.0	35	23.7	0	0.0	1	0.8	0	0.0	0	0.0	50	34.1
		Subtotal	0	0.0	21	14.3	82	55.6	0	0.0	43	29.3	0	0.0	1	0.8	0	0.0	0	0.0	147	100.0
Season Total	530	Males	0	0.0	385	13.5	1548	54.3	0	0.0	98	3.5	13	0.4	3	0.1	0	0.0	0	0.0	2,047	71.8
		Females	3	0.1	153	5.4	367	12.9	0	0.0	271	9.5	6	0.2	1	0.0	3	0.1	0	0.0	804	28.2
		Subtotal	3	0.1	538	18.9	1,915	67.2	0	0.0	369	13.0	19	0.6	4	0.1	3	0.1	0	0.0	2,851	100.0
Mean Length Std. Error	Males	-		564		696		-		795		680		560		-		-		-		
		-		8		4		-		15		50		-		-		-		-		
Mean Length Std. Error	Females	390		519		716		-		838		820		840		790		-		-		
		-		11		12		-		8		-		-		-		-		-		

Note: Samples were collected by the US Fish and Wildlife Service (USFWS).

**Appendix A27.**—Salcha River carcass survey, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)												Total							
			2003		2002		2001		2000		1999		1998									
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	No.	%								
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%						
7/28-8/4	186	Males	0	0.0	13	7.0	78	41.9	0	0.0	13	7.0	0	0.0	1	0.5	0	0.0	0	0.0	105	56.4
		Females	0	0.0	0	0.0	15	8.1	0	0.0	64	34.4	0	0.0	2	1.1	0	0.0	0	0.0	81	43.6
		Subtotal	0	0.0	13	7.0	93	50.0	0	0.0	77	41.4	0	0.0	3	1.6	0	0.0	0	0.0	186	100.0
8/5-8/8	161	Males	0	0.0	11	6.8	66	41.0	0	0.0	14	8.7	0	0.0	1	0.6	0	0.0	0	0.0	92	57.1
		Females	0	0.0	0	0.0	14	8.7	0	0.0	53	32.9	0	0.0	2	1.3	0	0.0	0	0.0	69	42.9
		Subtotal	0	0.0	11	6.8	80	49.7	0	0.0	67	41.6	0	0.0	3	1.9	0	0.0	0	0.0	161	100.0
8/9-12, 14	162	Males	0	0.0	5	3.1	62	38.3	0	0.0	23	14.2	0	0.0	1	0.6	0	0.0	0	0.0	91	56.2
		Females	0	0.0	0	0.0	16	9.9	0	0.0	51	31.5	1	0.6	3	1.8	0	0.0	0	0.0	71	43.8
		Subtotal	0	0.0	5	3.1	78	48.2	0	0.0	74	45.7	1	0.6	4	2.4	0	0.0	0	0.0	162	100.0
Season Total <sup>a</sup>	509	Males	0	0.0	29	5.7	206	40.5	0	0.0	50	9.8	0	0.0	3	0.6	0	0.0	0	0.0	288	56.6
		Females	0	0.0	0	0.0	45	8.8	0	0.0	168	33.0	1	0.2	7	1.4	0	0.0	0	0.0	221	43.4
		Total	0	0.0	29	5.7	251	49.3	0	0.0	218	42.8	1	0.2	10	2.0	0	0.0	0	0.0	509	100.0
Mean Length		Males	-		557		709		-		828		-		930		-		-		-	
Std. Error			-		10		5		-		15		-		-		-		-		-	
Mean Length		Females	-		-		803		-		869		625		936		-		-		-	
Std. Error			-		-		7		-		4		-		26		-		-		-	

<sup>a</sup> The numbers of fish in each age group were based on sample size and do not indicate the Salcha River run passage composition.



**Appendix A28.**–Tozitna River weir, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates (Strata Dates)	Sample Size	Brood Year (Age)																Total				
		2003		2002		2001		2000		1999		1998										
		(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)											
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
7/3, 6, 10-16, 8/3, 7 (7/3-8/8)	69	Males	0	0.0	63	13.0	349	72.5	0	0.0	14	2.9	0	0.0	0	0.0	0	0.0	0	0.0	426	88.4
		Females	0	0.0	0	0.0	49	10.1	0	0.0	7	1.5	0	0.0	0	0.0	0	0.0	0	0.0	56	11.6
		Season Total	0	0.0	63	13.0	398	82.6	0	0.0	21	4.4	0	0.0	0	0.0	0	0.0	0	0.0	482	100.0
Mean Length		Males	-		548		684		-		750		-		-		-		-			
Std. Error			-		15		9		-		30		-		-		-		-			
Mean Length		Females	-		-		740		-		870		-		-		-		-			
Std. Error			-		-		22		-		-		-		-		-		-			

*Note:* Samples were collected by the Bureau of Land Management (BLM).

**Appendix A29.**—Sheenjek River gillnet, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)														Total							
			2003		2002		2001		2000		1999		1998											
			(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
7/18-8/1	35	Males	0	0.0	2	5.7	18	51.4	0	0.0	2	5.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	22	62.9
		Females	0	0.0	1	2.9	9	25.7	0	0.0	3	8.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13	37.1
		Season Total	0	0.0	3	8.6	27	77.1	0	0.0	5	14.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	35	100.0
Mean Length <sup>a</sup> Std. Error	Males	-		670		882		-		1010		-		-		-		-		-		-		
		-		60		20		-		90		-		-		-		-		-		-		
Mean Length Std. Error	Females	-		510		853		-		937		-		-		-		-		-		-		
		-		-		67		-		35		-		-		-		-		-		-		

*Note:* Samples were collected by the Council of Athabascan Tribal Governments (CATG). Samples were collected from gillnets.

<sup>a</sup> Length type measured was tip-of-snout to lobe-of-tail.

**Appendix A30.**—Blind Creek weir, Canada, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.

		Brood Year (Age)																						
Sample Dates	Sample Size	2003		2002		2001		2000		1999		1998												
		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total		
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
7/29-8/1, 3-14, 16-17	36	Males	0	0.0	1	2.8	17	47.2	1	2.8	3	8.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	22	61.1
		Females	0	0.0	0	0.0	7	19.4	0	0.0	7	19.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	14	38.9
Season Total <sup>a</sup>		Total	0	0.0	1	2.8	24	66.7	1	2.8	10	27.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	36	100.0
Mean Length <sup>b</sup>		Males	-		770		762		620		810		-		-		-		-		-		-	
Std. Error			-		-		27		-		36		-		-		-		-		-		-	
Mean Length		Females	-		-		811		-		854		-		-		-		-		-		-	
Std. Error			-		-		35		-		16		-		-		-		-		-		-	

*Note:* Samples were collected by the Canadian Department of Fisheries and Oceans (DFO).

<sup>a</sup> The numbers of fish in each age group were based on sample size and do not indicate the Blind Creek run passage composition.

<sup>b</sup> Length type measured was tip-of-snout to fork-of-tail.

**Appendix A31.**–Big Salmon River, Canada, carcass survey, Chinook salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size	Brood Year (Age)																Total				
		2003		2002		2001		2000		1999		1998										
		(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)											
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%					
8/25-27, 30-9/1	180	Males	0	0.0	12	6.7	49	27.2	0	0.0	19	10.6	0	0.0	2	1.1	0	0.0	0	0.0	82	45.6
		Females	0	0.0	0	0.0	23	12.8	0	0.0	71	39.4	0	0.0	2	1.1	2	1.1	0	0.0	98	54.4
Season Total <sup>a</sup>		Total	0	0.0	12	6.7	72	40.0	0	0.0	90	50.0	0	0.0	4	2.2	2	1.1	0	0.0	180	100.0
Mean Length <sup>b</sup>		Males	-		602		810		-		989		-		949		-		-			
Std. Error			-		14		14		-		19		-		36		-		-			
Mean Length		Females	-		-		869		-		897		-		998		927		-			
Std. Error			-		-		10		-		6		-		44		22		-			

*Note:* Samples were collected by the Canadian Department of Fisheries and Oceans (DFO).  
<sup>a</sup> The numbers of fish in each age group were based on sample size and do not indicate the Big Salmon River run passage composition.  
<sup>b</sup> Length type measured was tip-of-snout to fork-of-tail.

## **APPENDIX B: SUMMER CHUM SALMON TABLES**

**Appendix B1.**—Yukon River, District 1, summer chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year ( Age )										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/19-20 Period 1	155	Males	0	0.0	356	5.2	3,425	49.7	44	0.6	0	0.0	3,825	55.5
		Females	0	0.0	311	4.5	2,758	40.0	0	0.0	0	0.0	3,069	44.5
		Subtotal	0	0.0	667	9.7	6,182	89.7	44	0.6	0	0.0	6,894	100.0
6/25-26 Period 2	158	Males	0	0.0	905	15.2	2,601	43.7	0	0.0	0	0.0	3,506	58.9
		Females	38	0.6	754	12.7	1,659	27.8	0	0.0	0	0.0	2,451	41.1
		Subtotal	38	0.6	1,659	27.8	4,260	71.5	0	0.0	0	0.0	5,957	100.0
6/29-30 Period 3	160	Males	0	0.0	865	14.4	2,106	35.0	0	0.0	0	0.0	2,971	49.4
		Females	0	0.0	639	10.6	2,407	40.0	0	0.0	0	0.0	3,047	50.6
		Subtotal	0	0.0	1,505	25.0	4,514	75.0	0	0.0	0	0.0	6,018	100.0
7/3-4 Period 4	158	Males	0	0.0	324	13.9	883	38.0	0	0.0	0	0.0	1,207	51.9
		Females	0	0.0	412	17.7	706	30.4	0	0.0	0	0.0	1,118	48.1
		Subtotal	0	0.0	736	31.6	1,589	68.4	0	0.0	0	0.0	2,325	100.0
7/6 Period 5	103	Males	0	0.0	97	15.5	211	34.0	0	0.0	0	0.0	308	49.5
		Females	6	1.0	91	14.6	217	35.0	0	0.0	0	0.0	314	50.5
		Subtotal	6	1.0	187	30.1	429	68.9	0	0.0	0	0.0	622	100.0
Other <sup>b</sup>	0	Males	0	0.0	59	11.7	212	42.3	1	0.2	0	0.0	272	54.2
		Females	1	0.2	51	10.1	178	35.5	0	0.0	0	0.0	230	45.8
		Subtotal	1	0.2	109	21.8	391	77.8	1	0.2	0	0.0	502	100.0
Total All Periods	734	Males	0	0.0	2,605	11.7	9,439	42.3	46	0.2	0	0.0	12,089	54.2
		Females	45	0.2	2,258	10.1	7,926	35.5	0	0.0	0	0.0	10,229	45.8
		Total	45	0.2	4,863	21.8	17,365	77.8	46	0.2	0	0.0	22,318	100.0
Mean Length Std. Error	Males	-		579		604		675		-				
		-		4		2		-		-				
Mean Length Std. Error	Females	538		558		575		-		-				
		38		4		2		-		-				

*Note:* All District 1 commercial fishing periods permitted unrestricted mesh sizes, because it was a Chinook directed fishery, 8.0-inch mesh and larger was likely used.

<sup>a</sup> Other includes all ADF&G test fish sold; these fish were not recorded as part of the harvest for any period.

<sup>b</sup> Test fish sold during the commercial fishery were not sampled, therefore, the age composition was calculated using percentages from the season total.

**Appendix B2.**—Yukon River, District 2, summer chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year ( Age )										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
6/15 Period 1	160	Males	0	0.0	27	2.5	491	45.0	0	0.0	0	0.0	518	47.5
		Females	0	0.0	27	2.5	546	50.0	0	0.0	0	0.0	573	52.5
		Subtotal	0	0.0	55	5.0	1,036	95.0	0	0.0	0	0.0	1,091	100.0
6/22 Period 2 <sup>a</sup>	0	Males	0	0.0	1,133	9.6	5,666	48.1	76	0.6	0	0.0	6,875	58.3
		Females	0	0.0	1,435	12.2	3,475	29.5	0	0.0	0	0.0	4,910	41.7
		Subtotal	0	0.0	2,569	21.8	9,141	77.6	76	0.6	0	0.0	11,785	100.0
6/24 Period 3	156	Males	0	0.0	488	9.6	2,441	48.1	33	0.6	0	0.0	2,962	58.3
		Females	0	0.0	618	12.2	1,497	29.5	0	0.0	0	0.0	2,116	41.7
		Subtotal	0	0.0	1,107	21.8	3,939	77.6	33	0.6	0	0.0	5,078	100.0
6/27 Period 4	157	Males	0	0.0	409	10.2	1,891	47.1	0	0.0	0	0.0	2,299	57.3
		Females	0	0.0	281	7.0	1,431	35.7	0	0.0	0	0.0	1,712	42.7
		Subtotal	0	0.0	690	17.2	3,321	82.8	0	0.0	0	0.0	4,011	100.0
7/2 Period 5 <sup>b</sup>	0	Males	0	0.0	232	10.2	1,075	47.1	0	0.0	0	0.0	1,308	57.3
		Females	0	0.0	160	7.0	814	35.7	0	0.0	0	0.0	973	42.7
		Subtotal	0	0.0	392	17.2	1,889	82.8	0	0.0	0	0.0	2,281	100.0
7/6 Period 6 <sup>b</sup>	0	Males	0	0.0	132	10.2	611	47.1	0	0.0	0	0.0	744	57.3
		Females	0	0.0	91	7.0	463	35.7	0	0.0	0	0.0	553	42.7
		Subtotal	0	0.0	223	17.2	1,074	82.8	0	0.0	0	0.0	1,297	100.0
Total All Periods	473	Males	0	0.0	2,422	9.5	12,175	47.7	108	0.4	0	0.0	14,705	57.6
		Females	0	0.0	2,613	10.2	8,225	32.2	0	0.0	0	0.0	10,838	42.4
		Total	0	0.0	5,035	19.7	20,400	79.9	108	0.4	0	0.0	25,543	100.0
Mean Length Std. Error	Males	-		582		610		610		-				
		-		4		2		-		-				
Mean Length Std. Error	Females	-		557		589		-		-				
		-		5		3		-		-				

*Note:* Mesh size was restricted to 6-inch for period 2 and unrestricted for all other periods; because it was a Chinook directed fishery, 8.0-inch mesh and larger was most likely used.

<sup>a</sup> Age and sex composition was estimated from period 3.

<sup>b</sup> Age and sex composition was estimated from period 4.

**Appendix B3.**—Yukon River, District 3, summer chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.

Brood Year ( Age )														
Sample Dates <sup>a</sup>	Sample Size		2003 (0.2)		2002 (0.3)		2001 (0.4)		2000 (0.5)		1999 (0.6)		Total	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/21 Period 1	58	Males	0	0.0	9	12.1	52	67.2	0	0.0	0	0.0	61	79.3
		Females	0	0.0	1	1.7	15	19.0	0	0.0	0	0.0	16	20.7
		Subtotal	0	0.0	11	13.8	66	86.2	0	0.0	0	0.0	77	100.0
6/26 Period 2	0	Males	0	0.0	5	12.1	26	67.2	0	0.0	0	0.0	31	79.3
		Females	0	0.0	1	1.7	7	19.0	0	0.0	0	0.0	8	20.7
		Subtotal	0	0.0	5	13.8	34	86.2	0	0.0	0	0.0	39	100.0
Total All Periods	58	Males	0	0.0	14	12.1	78	67.2	0	0.0	0	0.0	92	79.3
		Females	0	0.0	2	1.7	22	19.0	0	0.0	0	0.0	24	20.7
		Total	0	0.0	16	13.8	100	86.2	0	0.0	0	0.0	116	100.0
Mean Length		Males	-		581		623		-		-			
Std. Error			-		10		5		-		-			
Mean Length		Females	-		535		594		-		-			
Std. Error			-		-		7		-		-			

*Note:* All District 3 commercial fishing periods permitted unrestricted mesh sizes, because it was a Chinook directed fishery, 8.0-inch mesh and larger was likely used.

<sup>a</sup> Age and sex composition was estimated from period 1.



**Appendix B4.**—Yukon River, Subdistrict 6-B, summer chum salmon commercial harvest age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/14-16 Period 2	153	Males	0	0.0	142	7.8	557	30.7	0	0.0	0	0.0	699	38.6
		Females	0	0.0	154	8.5	960	52.9	0	0.0	0	0.0	1,114	61.4
		Subtotal	0	0.0	296	16.3	1,517	83.7	0	0.0	0	0.0	1,813	100.0
7/22-23 Period 3	153	Males	0	0.0	167	3.3	2,337	45.8	0	0.0	0	0.0	2,504	49.0
		Females	0	0.0	334	6.5	2,270	44.4	0	0.0	0	0.0	2,604	51.0
		Subtotal	0	0.0	501	9.8	4,607	90.2	0	0.0	0	0.0	5,108	100.0
7/24-26 Period 4	150	Males	0	0.0	206	2.7	3,351	43.3	0	0.0	0	0.0	3,557	46.0
		Females	0	0.0	258	3.3	3,918	50.7	0	0.0	0	0.0	4,176	54.0
		Subtotal	0	0.0	464	6.0	7,269	94.0	0	0.0	0	0.0	7,733	100.0
7/28-8/2 Period 5	218	Males	0	0.0	1,214	5.0	8,721	36.2	0	0.0	0	0.0	9,935	41.3
		Females	0	0.0	1,435	6.0	12,695	52.8	0	0.0	0	0.0	14,130	58.7
		Subtotal	0	0.0	2,649	11.0	21,416	89.0	0	0.0	0	0.0	24,065	100.0
8/4-9 Period 6 <sup>b</sup>	0	Males	0	0.0	298	5.0	2,139	36.2	0	0.0	0	0.0	2,437	41.3
		Females	0	0.0	352	6.0	3,113	52.8	0	0.0	0	0.0	3,465	58.7
		Subtotal	0	0.0	650	11.0	5,252	89.0	0	0.0	0	0.0	5,902	100.0
Total All Periods	674	Males	0	0.0	2,027	4.5	17,104	38.3	0	0.0	0	0.0	19,132	42.9
		Females	0	0.0	2,533	5.7	22,956	51.4	0	0.0	0	0.0	25,489	57.1
		Total	0	0.0	4,560	10.2	40,061	89.8	0	0.0	0	0.0	44,621	100.0
Mean Length		Males	-		584		590		-		-			
Std. Error			-		7		2		-		-			
Mean Length		Females	-		559		567		-		-			
Std. Error			-		5		2		-		-			

Note: Samples were collected from fish wheels.

<sup>a</sup> No fish were harvested during period 1.

<sup>b</sup> Age and sex composition was estimated from period 5.

**Appendix B5.**—Yukon River, District 1, summer chum salmon subsistence 5.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/14	60	Males	0	0.0	3	5.0	34	56.7	0	0.0	0	0.0	37	61.7
		Females	0	0.0	1	1.7	22	36.7	0	0.0	0	0.0	23	38.3
		Season Total	0	0.0	4	6.7	56	93.3	0	0.0	0	0.0	60	100.0
Mean Length		Males	-		573		593		-		-			
Std. Error			-		2		5		-		-			
Mean Length		Females	-		555		575		-		-			
Std. Error			-		-		4		-		-			

**Appendix B6.**—Yukon River, District 1, summer chum salmon subsistence 5.5-inch mesh gillnet harvest age composition, 2006.

Sample Dates <sup>a</sup>	Sample Size	Brood Year (Age)										Total		
		2003		2002		2001		2000		1999				
		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)				
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
6/13-14														
Season Total	90	0	0.0	6	6.7	84	93.3	0	0.0	0	0.0	90	100.0	

<sup>a</sup> Combines all sexed (Appendix B5) and all unsexed summer chum salmon sampled from the 5.5-inch mesh gillnet subsistence harvest.

**Appendix B7.**—Yukon River, District 1, summer chum salmon subsistence 8.5-inch mesh gillnet harvest age composition, 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%		
6/7-9	16	Males	0	0.0	0	0.0	8	50.0	0	0.0	0	0.0	8	50.0
		Females	0	0.0	0	0.0	8	50.0	0	0.0	0	0.0	8	50.0
		Subtotal	0	0.0	0	0.0	16	100.0	0	0.0	0	0.0	16	100.0
6/14	6	Males	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0	1	16.7
		Females	0	0.0	0	0.0	5	83.3	0	0.0	0	0.0	5	83.3
		Subtotal	0	0.0	0	0.0	6	100.0	0	0.0	0	0.0	6	100.0
Season Total	22	Males	0	0.0	0	0.0	9	40.9	0	0.0	0	0.0	9	40.9
		Females	0	0.0	0	0.0	13	59.1	0	0.0	0	0.0	13	59.1
		Total	0	0.0	0	0.0	22	100.0	0	0.0	0	0.0	22	100.0
Mean Length		Males	-		-		618		-		-			
Std. Error			-		-		12		-		-			
Mean Length		Females	-		-		600		-		-			
Std. Error			-		-		8		-		-			

<sup>a</sup> Sample dates are stratified by week.

**Appendix B8.**—Yukon River, Big Eddy, summer chum salmon 5.5-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/7-8, 10-16 Quartile 1	153	Males	0	0.0	7	4.6	60	39.2	0	0.0	0	0.0	67	43.8
		Females	0	0.0	8	5.2	78	51.0	0	0.0	0	0.0	86	56.2
		Subtotal	0	0.0	15	9.8	138	90.2	0	0.0	0	0.0	153	100.0
6/17-22 Quartile 2	160	Males	0	0.0	18	11.3	52	32.5	0	0.0	0	0.0	70	43.8
		Females	0	0.0	20	12.5	69	43.1	1	0.6	0	0.0	90	56.3
		Subtotal	0	0.0	38	23.8	121	75.6	1	0.6	0	0.0	160	100.0
6/23-26 Quartile 3	107	Males	0	0.0	18	16.8	26	24.3	0	0.0	0	0.0	44	41.1
		Females	0	0.0	15	14.0	48	44.9	0	0.0	0	0.0	63	58.9
		Subtotal	0	0.0	33	30.8	74	69.2	0	0.0	0	0.0	107	100.0
6/27-7/4, 6-11, 13-14 Quartile 4	215	Males	0	0.0	39	18.1	57	26.5	0	0.0	0	0.0	96	44.7
		Females	0	0.0	36	16.7	83	38.6	0	0.0	0	0.0	119	55.3
		Subtotal	0	0.0	75	34.9	140	65.1	0	0.0	0	0.0	215	100.0
Season Total	635	Males	0	0.0	82	12.9	195	30.7	0	0.0	0	0.0	277	43.6
		Females	0	0.0	79	12.4	278	43.8	1	0.2	0	0.0	358	56.4
		Total	0	0.0	161	25.4	473	74.5	1	0.2	0	0.0	635	100.0
Mean Length Std. Error	Males	-		567		590		-		-				
		-		3		2		-		-				
Mean Length Std. Error	Females	-		551		568		610		-				
		-		3		2		-		-				

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 5.5-inch mesh drift gillnet catch totals.

**Appendix B9.**—Yukon River, Middle Mouth, summer chum salmon 5.5-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/7, 14-16	28	Males	0	0.0	0	0.0	10	35.7	0	0.0	0	0.0	10	35.7
Quartile 1		Females	0	0.0	1	3.6	17	60.7	0	0.0	0	0.0	18	64.3
		Subtotal	0	0.0	1	3.6	27	96.4	0	0.0	0	0.0	28	100.0
6/17, 21-22	7	Males	0	0.0	0	0.0	2	28.6	0	0.0	0	0.0	2	28.6
Quartile 2		Females	0	0.0	2	28.6	3	42.9	0	0.0	0	0.0	5	71.4
		Subtotal	0	0.0	2	28.6	5	71.4	0	0.0	0	0.0	7	100.0
6/23-26	109	Males	2	1.8	14	12.8	24	22.0	0	0.0	0	0.0	40	36.7
Quartile 3		Females	0	0.0	18	16.5	51	46.8	0	0.0	0	0.0	69	63.3
		Subtotal	2	1.8	32	29.4	75	68.8	0	0.0	0	0.0	109	100.0
6/27-7/4,	81	Males	0	0.0	12	14.8	12	14.8	0	0.0	0	0.0	24	29.6
9, 11, 14		Females	1	1.2	27	33.3	29	35.8	0	0.0	0	0.0	57	70.4
Quartile 4		Subtotal	1	1.2	39	48.1	41	50.6	0	0.0	0	0.0	81	100.0
Season Total	225	Males	2	0.9	26	11.6	48	21.3	0	0.0	0	0.0	76	33.8
		Females	1	0.4	48	21.3	100	44.4	0	0.0	0	0.0	149	66.2
		Total	3	1.3	74	32.9	148	65.8	0	0.0	0	0.0	225	100.0
Mean Length		Males	558		578		579		-		-			
Std. Error			18		7		4		-		-			
Mean Length		Females	535		558		574		-		-			
Std. Error			-		3		3		-		-			

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 5.5-inch mesh drift gillnet catch totals.

**Appendix B10.**—Yukon River, Big Eddy and Middle Mouth combined, summer chum salmon 5.5-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/7-8, 10-16 Quartile 1	181	Males	0	0.0	7	3.9	70	38.7	0	0.0	0	0.0	77	42.5
		Females	0	0.0	9	5.0	95	52.5	0	0.0	0	0.0	104	57.5
		Subtotal	0	0.0	16	8.8	165	91.2	0	0.0	0	0.0	181	100.0
6/17-22 Quartile 2	167	Males	0	0.0	18	10.8	54	32.3	0	0.0	0	0.0	72	43.1
		Females	0	0.0	22	13.2	72	43.1	1	0.6	0	0.0	95	56.9
		Subtotal	0	0.0	40	24.0	126	75.4	1	0.6	0	0.0	167	100.0
6/23-26 Quartile 3	216	Males	2	0.9	32	14.8	50	23.1	0	0.0	0	0.0	84	38.9
		Females	0	0.0	33	15.3	99	45.8	0	0.0	0	0.0	132	61.1
		Subtotal	2	0.9	65	30.1	149	69.0	0	0.0	0	0.0	216	100.0
6/27-7/4, 6-11, 13-14 Quartile 4	296	Males	0	0.0	51	17.2	69	23.3	0	0.0	0	0.0	120	40.5
		Females	1	0.3	63	21.3	112	37.8	0	0.0	0	0.0	176	59.5
		Subtotal	1	0.3	114	38.5	181	61.1	0	0.0	0	0.0	296	100.0
Season Total	860	Males	2	0.2	108	12.6	243	28.3	0	0.0	0	0.0	353	41.0
		Females	1	0.1	127	14.8	378	44.0	1	0.1	0	0.0	507	59.0
		Total	3	0.3	235	27.3	621	72.2	1	0.1	0	0.0	860	100.0
Mean Length Std. Error	Males		558		570		588		-		-			
			18		3		2		-		-			
Mean Length Std. Error	Females		535		553		570		610		-			
			-		2		1		-		-			

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 5.5-inch mesh drift gillnet catch totals.

**Appendix B11.**—Andreafsky River (east fork) weir, summer chum salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates (Strata Dates)			Sample Size		Brood Year (Age)										Total	
					2003		2002		2001		2000		1999			
					(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
6/28-30 (6/28-7/1)	87	Males	0	0.0	2,288	8.0	16,672	58.6	0	0.0	0	0.0	18,960	66.6		
		Females	0	0.0	1,308	4.6	8,172	28.8	0	0.0	0	0.0	9,480	33.4		
		Subtotal	0	0.0	3,596	12.6	24,844	87.4	0	0.0	0	0.0	28,440	100.0		
7/3-6 (7/2-7)	145	Males	0	0.0	4,040	8.9	17,090	37.9	0	0.0	0	0.0	21,130	46.8		
		Females	311	0.7	6,835	15.2	16,780	37.3	0	0.0	0	0.0	23,926	53.2		
		Subtotal	311	0.7	10,875	24.1	33,870	75.2	0	0.0	0	0.0	45,056	100.0		
7/9-13, 16-17 (7/8-18)	187	Males	0	0.0	4,485	20.9	4,945	23.0	115	0.5	0	0.0	9,545	44.4		
		Females	230	1.1	4,946	23.0	6,786	31.5	0	0.0	0	0.0	11,962	55.6		
		Subtotal	230	1.1	9,431	43.9	11,731	54.5	115	0.5	0	0.0	21,507	100.0		
7/21-26 (7/19-27)	239	Males	54	0.8	1,433	22.2	1,055	16.3	0	0.0	0	0.0	2,542	39.3		
		Females	27	0.4	2,325	36.0	1,568	24.3	0	0.0	0	0.0	3,920	60.7		
		Subtotal	81	1.2	3,758	58.2	2,623	40.6	0	0.0	0	0.0	6,462	100.0		
Season Total	658	Males	54	0.0	12,246	12.1	39,762	39.2	115	0.1	0	0.0	52,177	51.4		
		Females	568	0.6	15,414	15.2	33,306	32.8	0	0.0	0	0.0	49,288	48.6		
		Total	622	0.6	27,660	27.3	73,068	72.0	115	0.1	0	0.0	101,465	100.0		
Mean Length		Males	493		561		580		540		-					
Std. Error			8		5		3		-		-					
Mean Length		Females	487		520		536		-		-					
Std. Error			5		4		2		-		-					

*Note:* Samples were collected by the US Fish and Wildlife Service (USFWS).

**Appendix B12.**—Anvik River sonar, summer chum salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates (Strata Dates)	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/30, 7/2 (6/28-7/3)	146	Males	0	0.0	19,136	11.0	68,170	39.0	0	0.0	0	0.0	87,306	50.0
		Females	0	0.0	29,899	17.1	57,407	32.9	0	0.0	0	0.0	87,306	50.0
		Subtotal	0	0.0	49,035	28.1	125,577	71.9	0	0.0	0	0.0	174,612	100.0
7/4 (7/4-6)	78	Males	0	0.0	24,235	17.9	60,587	44.9	0	0.0	0	0.0	84,822	62.8
		Females	0	0.0	31,159	23.1	19,042	14.1	0	0.0	0	0.0	50,201	37.2
		Subtotal	0	0.0	55,394	41.0	79,629	59.0	0	0.0	0	0.0	135,023	100.0
7/7, 9 (7/7-11)	94	Males	3,033	2.1	25,778	18.1	31,843	22.3	0	0.0	0	0.0	60,655	42.6
		Females	3,033	2.1	37,908	26.6	40,941	28.7	0	0.0	0	0.0	81,881	57.4
		Subtotal	6,066	4.3	63,686	44.7	72,784	51.1	0	0.0	0	0.0	142,536	100.0
7/12-13, 16 (7/12-26)	164	Males	935	0.6	26,176	17.1	38,329	25.0	0	0.0	0	0.0	65,440	42.7
		Females	935	0.6	46,742	30.5	40,198	26.2	0	0.0	0	0.0	87,875	57.3
		Subtotal	1,870	1.2	72,918	47.6	78,527	51.2	0	0.0	0	0.0	153,315	100.0
Season Total	482	Males	3,968	0.7	95,325	15.7	198,929	32.9	0	0.0	0	0.0	298,223	49.3
		Females	3,968	0.6	145,707	24.1	157,588	26.0	0	0.0	0	0.0	307,263	50.7
		Total	7,937	1.3	241,032	39.8	356,517	58.9	0	0.0	0	0.0	605,486	100.0
Mean Length		Males	561		575		589		-		-			
Std. Error			35		4		2		-		-			
Mean Length		Females	548		543		548		-		-			
Std. Error			25		3		2		-		-			

Note: Samples were collected with a beach seine.



**Appendix B13.**—Gisasa River weir summer chum salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates (Strata Dates)			Sample Size			Brood Year (Age)											
						2003		2002		2001		2000		1999		Total	
						(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
7/8, 11-12 (6/28-7/12)	92	Males	0	0.0	10,677	6.5	71,181	43.5	0	0.0	0	0.0	81,858	50.0			
		Females	0	0.0	7,118	4.4	74,740	45.6	0	0.0	0	0.0	81,858	50.0			
		Subtotal	0	0.0	17,795	10.9	145,921	89.1	0	0.0	0	0.0	163,716	100.0			
7/13-17 (7/13-7/18)	150	Males	0	0.0	2,030	5.3	13,955	36.7	0	0.0	0	0.0	15,985	42.0			
		Females	0	0.0	1,522	4.0	20,553	54.0	0	0.0	0	0.0	22,075	58.0			
		Subtotal	0	0.0	3,552	9.3	34,508	90.7	0	0.0	0	0.0	38,060	100.0			
7/19-22 (7/19-7/23)	107	Males	0	0.0	1,062	6.5	5,914	36.5	0	0.0	0	0.0	6,976	43.0			
		Females	152	0.9	1,516	9.4	7,583	46.7	0	0.0	0	0.0	9,251	57.0			
		Subtotal	152	0.9	2,578	15.9	13,497	83.2	0	0.0	0	0.0	16,227	100.0			
7/24, 26-27, 29 (7/24-7/29)	147	Males	49	0.7	442	6.1	2,407	33.3	0	0.0	0	0.0	2,898	40.1			
		Females	0	0.0	1,278	17.7	3,046	42.2	0	0.0	0	0.0	4,324	59.9			
		Subtotal	49	0.7	1,720	23.8	5,453	75.5	0	0.0	0	0.0	7,222	100.0			
Season Total	496	Males	49	0.0	14,211	6.3	93,457	41.5	0	0.0	0	0.0	107,717	47.8			
		Females	152	0.1	11,434	5.1	105,922	47.0	0	0.0	0	0.0	117,508	52.2			
		Total	201	0.1	25,645	11.4	199,379	88.5	0	0.0	0	0.0	225,225	100.0			
Mean Length Std. Error	Males		500		586		574		-		-						
			-		9		4		-		-						
Mean Length Std. Error	Females		460		535		545		-		-						
			-		9		3		-		-						

Note: Samples were collected by the US Fish and Wildlife Service (USFWS).

**Appendix B14.**—Tozitna River weir summer chum salmon escapement project age and sex composition and mean length (mm), 2006.

			Brood Year (Age)											
Sample Dates (Strata Dates)	Sample Size		2003 (0.2)		2002 (0.3)		2001 (0.4)		2000 (0.5)		1999 (0.6)		Total	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/3-6, 8-9 (7/3-9)	91	Males	7	2.2	14	4.4	206	64.8	0	0.0	0	0.0	227	71.4
		Females	7	2.2	7	2.2	77	24.2	0	0.0	0	0.0	91	28.6
		Subtotal	14	4.4	21	6.6	283	89.0	0	0.0	0	0.0	318	100.0
7/10-16 (7/10-19)	143	Males	0	0.0	140	4.2	2,171	65.0	0	0.0	0	0.0	2,311	69.2
		Females	0	0.0	117	3.5	911	27.3	0	0.0	0	0.0	1,028	30.8
		Subtotal	0	0.0	257	7.7	3,082	92.3	0	0.0	0	0.0	3,339	100.0
7/28-30 (7/20-30)	103	Males	0	0.0	2,047	16.5	3,372	27.2	0	0.0	0	0.0	5,419	43.7
		Females	0	0.0	3,131	25.2	3,853	31.1	0	0.0	0	0.0	6,984	56.3
		Subtotal	0	0.0	5,178	41.7	7,225	58.3	0	0.0	0	0.0	12,403	100.0
7/31-8/3 (7/31-8/3)	99	Males	0	0.0	213	8.1	454	17.2	0	0.0	0	0.0	667	25.3
		Females	0	0.0	854	32.3	1,120	42.4	0	0.0	0	0.0	1,974	74.7
		Subtotal	0	0.0	1,067	40.4	1,574	59.6	0	0.0	0	0.0	2,641	100.0
8/4-8/8 (8/4-8/9)	107	Males	0	0.0	178	11.2	577	36.4	0	0.0	0	0.0	755	47.7
		Females	15	0.9	399	25.2	414	26.2	0	0.0	0	0.0	828	52.3
		Subtotal	15	0.9	577	36.4	991	62.6	0	0.0	0	0.0	1,583	100.0
Season Total	543	Males	7	0.0	2,592	12.8	6,780	33.4	0	0.0	0	0.0	9,379	46.2
		Females	22	0.1	4,508	22.2	6,375	31.4	0	0.0	0	0.0	10,905	53.8
		Total	29	0.1	7,100	35.0	13,155	64.9	0	0.0	0	0.0	20,284	100.0
Mean Length		Males	513		552		574		-		-			
Std. Error			18		5		3		-		-			
Mean Length		Females	525		534		542		-		-			
Std. Error			15		3		3		-		-			

*Note:* Samples were collected by the Bureau of Land Management (BLM).

## **APPENDIX C: FALL CHUM SALMON TABLES**

**Appendix C1.**–Yukon River, District 1, fall chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.

			Brood Year (Age)											
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
Sample Dates	Sample Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/30 Period 1	155	Males	0	0.0	2,567	15.5	4,706	28.4	0	0.0	0	0.0	7,273	43.9
		Females	214	1.3	3,423	20.6	5,562	33.5	107	0.6	0	0.0	9,306	56.1
		Subtotal	214	1.3	5,990	36.1	10,268	61.9	107	0.6	0	0.0	16,579	100.0
8/1 Period 2 <sup>a</sup>	0	Males	0	0.0	901	14.3	1,742	27.7	0	0.0	0	0.0	2,643	42.0
		Females	40	0.6	1,302	20.7	2,283	36.3	20	0.3	0	0.0	3,645	58.0
		Subtotal	40	0.6	2,203	35.0	4,025	64.0	20	0.3	0	0.0	6,288	100.0
8/3 Period 3	159	Males	0	0.0	161	13.2	330	27.0	0	0.0	0	0.0	491	40.3
		Females	0	0.0	253	20.8	475	39.0	0	0.0	0	0.0	728	59.7
		Subtotal	0	0.0	414	34.0	805	66.0	0	0.0	0	0.0	1,219	100.0
8/6-7 Period 4	159	Males	47	0.6	900	11.9	2,843	37.7	0	0.0	0	0.0	3,791	50.3
		Females	0	0.0	758	10.1	2,985	39.6	0	0.0	0	0.0	3,743	49.7
		Subtotal	47	0.6	1,658	22.0	5,828	77.4	0	0.0	0	0.0	7,534	100.0
8/8-9 Period 5 <sup>b</sup>	0	Males	18	0.6	322	11.0	1,029	35.1	0	0.0	0	0.0	1,369	46.7
		Females	0	0.0	368	12.5	1,194	40.8	0	0.0	0	0.0	1,562	53.3
		Subtotal	18	0.6	689	23.5	2,224	75.9	0	0.0	0	0.0	2,931	100.0
8/10 Period 6	160	Males	9	0.6	151	10.0	491	32.5	0	0.0	0	0.0	651	43.1
		Females	0	0.0	227	15.0	632	41.9	0	0.0	0	0.0	859	56.9
		Subtotal	9	0.6	378	25.0	1,123	74.4	0	0.0	0	0.0	1,510	100.0
8/13 Period 7	158	Males	0	0.0	4,983	22.8	5,675	25.9	0	0.0	0	0.0	10,658	48.7
		Females	138	0.6	3,460	15.8	7,613	34.8	0	0.0	0	0.0	11,211	51.3
		Subtotal	138	0.6	8,443	38.6	13,287	60.8	0	0.0	0	0.0	21,869	100.0
8/15 Period 8 <sup>c</sup>	0	Males	63	1.0	1,500	23.0	1,711	26.2	0	0.0	0	0.0	3,274	50.2
		Females	84	1.3	1,331	20.4	1,837	28.2	0	0.0	0	0.0	3,252	49.8
		Subtotal	148	2.3	2,830	43.4	3,548	54.4	0	0.0	0	0.0	6,526	100.0
8/17 Period 9	151	Males	117	2.0	1,369	23.2	1,565	26.5	0	0.0	0	0.0	3,051	51.7
		Females	117	2.0	1,487	25.2	1,252	21.2	0	0.0	0	0.0	2,856	48.3
		Subtotal	235	4.0	2,856	48.3	2,817	47.7	0	0.0	0	0.0	5,907	100.0
8/20 Period 10	149	Males	0	0.0	2,956	28.2	2,604	24.8	0	0.0	0	0.0	5,561	53.0
		Females	0	0.0	2,534	24.2	2,393	22.8	0	0.0	0	0.0	4,927	47.0
		Subtotal	0	0.0	5,490	52.3	4,998	47.7	0	0.0	0	0.0	10,488	100.0
8/22 Period 11 <sup>d</sup>	0	Males	52	2.6	478	24.2	419	21.2	0	0.0	0	0.0	950	48.0
		Females	26	1.3	550	27.8	452	22.8	0	0.0	0	0.0	1,029	52.0
		Subtotal	79	4.0	1,029	52.0	872	44.0	0	0.0	0	0.0	1,979	100.0
8/24 Period 12	153	Males	240	5.2	932	20.3	812	17.6	0	0.0	0	0.0	1,984	43.1
		Females	120	2.6	1,443	31.4	1,052	22.9	0	0.0	0	0.0	2,615	56.9
		Subtotal	361	7.8	2,375	51.6	1,864	40.5	0	0.0	0	0.0	4,599	100.0
8/27 Period 13	160	Males	230	3.1	1,888	25.6	1,611	21.9	0	0.0	0	0.0	3,729	50.6
		Females	92	1.3	2,440	33.1	1,105	15.0	0	0.0	0	0.0	3,637	49.4
		Subtotal	322	4.4	4,328	58.8	2,716	36.9	0	0.0	0	0.0	7,366	100.0

-continued-

**Appendix C1.**–Page 2 of 2.

			Brood Year (Age)											
Sample Dates	Sample Size		2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
8/29-9/5 Periods 14-17 <sup>e</sup>	0	Males	202	3.1	1,655	25.6	1,413	21.9	0	0.0	0	0.0	3,270	50.6
		Females	81	1.3	2,140	33.1	969	15.0	0	0.0	0	0.0	3,189	49.4
		Subtotal	283	4.4	3,795	58.8	2,382	36.9	0	0.0	0	0.0	6,459	100.0
Season All Periods	1,404	Males	981	1.0	20,763	20.5	26,951	26.6	0	0.0	0	0.0	48,695	48.1
		Females	913	0.9	21,714	21.4	29,805	29.4	127	0.1	0	0.0	52,559	51.9
		Total	1,894	1.9	42,477	42.0	56,756	56.1	127	0.1	0	0.0	101,254	100.0
Mean Length		Males	565		578		599		-		-			
Std. Error			5		2		2		-		-			
Mean Length		Females	560		574		586		610		-			
Std. Error			4		1		1		-		-			

*Note:* All District 1 fall chum commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets.

<sup>a</sup> Age and sex composition was estimated by averaging periods 1 and 3.

<sup>b</sup> Age and sex composition was estimated by averaging periods 4 and 6.

<sup>c</sup> Age and sex composition was estimated by averaging periods 7 and 9.

<sup>d</sup> Age and sex composition was estimated by averaging periods 10 and 12.

<sup>e</sup> Age and sex composition was estimated from period 13.

**Appendix C2.**–Yukon River, Subdistricts 5-B, 5-C, fall chum salmon commercial fish wheel harvest age and sex composition and mean length (mm), 2006.

Brood Year ( Age )														
Sample Dates <sup>a</sup>	Sample Size		2003 (0.2)		2002 (0.3)		2001 (0.4)		2000 (0.5)		1999 (0.6)		Total	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
8/19 Period 2	110	Males	0	0.0	500	30.0	409	24.6	0	0.0	0	0.0	909	54.6
		Females	0	0.0	394	23.6	364	21.8	0	0.0	0	0.0	758	45.4
		Subtotal	0	0.0	894	53.6	773	46.4	0	0.0	0	0.0	1,667	100.0
8/24-25, 28 Period 3	437	Males	134	1.6	2,105	25.2	1,990	23.8	0	0.0	0	0.0	4,229	50.6
		Females	191	2.3	2,086	24.9	1,857	22.2	0	0.0	0	0.0	4,134	49.4
		Subtotal	325	3.9	4,191	50.1	3,847	46.0	0	0.0	0	0.0	8,363	100.0
Total All Periods	547	Males	134	1.3	2,605	26.0	2,399	23.9	0	0.0	0	0.0	5,138	51.2
		Females	191	1.9	2,480	24.7	2,221	22.2	0	0.0	0	0.0	4,892	48.8
		Total	325	3.2	5,085	50.7	4,620	46.1	0	0.0	0	0.0	10,030	100.0
Mean Length		Males	565		597		609		-		-			
Std. Error			14		3		3		-		-			
Mean Length		Females	536		578		591		-		-			
Std. Error			9		3		3		-		-			

*Note:* Samples were collected from fish wheels.

<sup>a</sup> No fish were harvested during period 1.

**Appendix C3.**—Yukon River, District 6, fall chum salmon commercial fish wheel harvest age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year ( Age )										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		No.	%
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
9/2 Period 1	142	Males	31	1.4	468	21.1	608	27.5	0	0.0	0	0.0	1,107	50.0
		Females	0	0.0	546	24.6	562	25.4	0	0.0	0	0.0	1,108	50.0
		Subtotal	31	1.4	1,014	45.8	1,170	52.8	0	0.0	0	0.0	2,215	100.0
9/5 Period 2	153	Males	0	0.0	498	29.4	343	20.3	0	0.0	0	0.0	840	49.7
		Females	0	0.0	442	26.1	409	24.2	0	0.0	0	0.0	852	50.3
		Subtotal	0	0.0	940	55.6	752	44.4	0	0.0	0	0.0	1,692	100.0
9/8-10 Period 3 <sup>a</sup>	0	Males	11	0.3	898	28.7	655	20.9	0	0.0	0	0.0	1,564	50.0
		Females	11	0.3	877	28.0	676	21.6	0	0.0	0	0.0	1,564	50.0
		Subtotal	21	0.7	1,775	56.8	1,332	42.6	0	0.0	0	0.0	3,128	100.0
9/12 Period 4	143	Males	53	0.7	2,118	28.0	1,641	21.7	0	0.0	0	0.0	3,812	50.3
		Females	53	0.7	2,277	30.1	1,430	18.9	0	0.0	0	0.0	3,760	49.7
		Subtotal	106	1.4	4,395	58.0	3,071	40.6	0	0.0	0	0.0	7,572	100.0
9/15-17 Period 5 <sup>b</sup>	0	Males	61	0.7	2,446	28.0	1,897	21.7	0	0.0	0	0.0	4,404	50.4
		Females	61	0.7	2,630	30.1	1,651	18.9	0	0.0	0	0.0	4,342	49.7
		Subtotal	122	1.4	5,076	58.0	3,548	40.6	0	0.0	0	0.0	8,746	100.0
Total All Periods	296	Males	156	0.7	6,428	27.5	5,144	22.0	0	0.0	0	0.0	11,728	50.2
		Females	125	0.5	6,772	29.0	4,728	20.2	0	0.0	0	0.0	11,625	49.8
		Total	281	1.2	13,201	56.5	9,872	42.3	0	0.0	0	0.0	23,353	100.0
Mean Length Std. Error	Males		552		594		601		-		-			
			19		3		3		-		-			
Mean Length Std. Error	Females		570		574		581		-		-			
			-		3		3		-		-			

*Note:* Samples were collected from gillnets and fish wheels.

<sup>a</sup> Age and sex composition was estimated by averaging periods 2 and 4.

<sup>b</sup> Age and sex composition was estimated from period 4.

**Appendix C4.**—Yukon River, Subdistrict 5-B, fall chum salmon subsistence fish wheel harvest age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		No.	%
			No.	%	No.	%	No.	%	No.	%	No.	%		
8/17	34	Males	0	0.0	3	8.8	10	29.4	0	0.0	0	0.0	13	38.2
		Females	0	0.0	6	17.6	15	44.1	0	0.0	0	0.0	21	61.8
		Subtotal	0	0.0	9	26.5	25	73.5	0	0.0	0	0.0	34	100.0
8/20	141	Males	0	0.0	24	17.0	46	32.6	0	0.0	0	0.0	70	49.6
		Females	0	0.0	20	14.2	51	36.2	0	0.0	0	0.0	71	50.4
		Subtotal	0	0.0	44	31.2	97	68.8	0	0.0	0	0.0	141	100.0
9/8	141	Males	0	0.0	31	22.0	29	20.6	0	0.0	0	0.0	60	42.6
		Females	0	0.0	38	27.0	43	30.5	0	0.0	0	0.0	81	57.4
		Subtotal	0	0.0	69	48.9	72	51.1	0	0.0	0	0.0	141	100.0
Season Total	316	Males	0	0.0	58	18.4	85	26.9	0	0.0	0	0.0	143	45.3
		Females	0	0.0	64	20.3	109	34.5	0	0.0	0	0.0	173	54.7
		Total	0	0.0	122	38.6	194	61.4	0	0.0	0	0.0	316	100.0
Mean Length		Males	-		608		606		-		-			
Std. Error			-		5		3		-		-			
Mean Length		Females	-		576		581		-		-			
Std. Error			-		4		3		-		-			

*Note:* Samples were collected from fish wheels.

<sup>a</sup> Sample dates are stratified by week.



**Appendix C5.**—Yukon River, Subdistrict 6-B, fall chum salmon subsistence harvest age and sex composition and mean length (mm), 2006.

Brood Year (Age)														
Sample Dates <sup>a</sup>	Sample Size		2003		2002		2001		2000		1999		Total	
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
9/26, 30	145	Males	0	0.0	39	26.9	42	29.0	0	0.0	0	0.0	81	55.9
		Females	1	0.7	35	24.1	28	19.3	0	0.0	0	0.0	64	44.1
		Subtotal	1	0.7	74	51.0	70	48.3	0	0.0	0	0.0	145	100.0
10/11	132	Males	1	0.8	23	17.4	8	6.1	0	0.0	0	0.0	32	24.2
		Females	2	1.5	43	32.6	55	41.7	0	0.0	0	0.0	100	75.8
		Subtotal	3	2.3	66	50.0	63	47.7	0	0.0	0	0.0	132	100.0
Season Total	277	Males	1	0.4	62	22.4	50	18.1	0	0.0	0	0.0	113	40.8
		Females	3	1.1	78	28.2	83	30.0	0	0.0	0	0.0	164	59.2
		Total	4	1.4	140	50.5	133	48.0	0	0.0	0	0.0	277	100.0
Mean Length		Males	555		585		601		-		-			
Std. Error			-		4		8		-		-			
Mean Length		Females	550		566		577		-		-			
Std. Error			10		3		3		-		-			

*Note:* Samples were collected from fish wheels.

<sup>a</sup> Sample dates are stratified by week.

**Appendix C6.**—Yukon River, Big Eddy, fall chum salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/16-18, 21-24, 27, 29 Quartile 1	92	Males	0	0.0	15	16.3	32	34.8	0	0.0	0	0.0	47	51.1
		Females	1	1.1	12	13.0	32	34.8	0	0.0	0	0.0	45	48.9
		Subtotal	1	1.1	27	29.3	64	69.6	0	0.0	0	0.0	92	100.0
7/30-8/3, 5 Quartile 2	27	Males	0	0.0	4	14.8	5	18.5	0	0.0	0	0.0	9	33.3
		Females	0	0.0	5	18.5	13	48.1	0	0.0	0	0.0	18	66.7
		Subtotal	0	0.0	9	33.3	18	66.7	0	0.0	0	0.0	27	100.0
8/7-9, 11-12, 15 Quartile 3	69	Males	2	2.9	6	8.7	6	8.7	0	0.0	0	0.0	14	20.3
		Females	2	2.9	27	39.1	26	37.7	0	0.0	0	0.0	55	79.7
		Subtotal	4	5.8	33	47.8	32	46.4	0	0.0	0	0.0	69	100.0
8/16-21, 23-24, 26-28 Quartile 4	162	Males	4	2.5	28	17.3	22	13.6	0	0.0	0	0.0	54	33.3
		Females	6	3.7	59	36.4	43	26.5	0	0.0	0	0.0	108	66.7
		Subtotal	10	6.2	87	53.7	65	40.1	0	0.0	0	0.0	162	100.0
Season Total	350	Males	6	1.7	53	15.1	65	18.6	0	0.0	0	0.0	124	35.4
		Females	9	2.6	103	29.4	114	32.6	0	0.0	0	0.0	226	64.6
		Total	15	4.3	156	44.6	179	51.1	0	0.0	0	0.0	350	100.0
Mean Length		Males	527		575		600		-		-			
Std. Error			11		4		4		-		-			
Mean Length		Females	541		567		576		-		-			
Std. Error			8		3		2		-		-			

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 6.0-inch mesh drift gillnet catch totals.

**Appendix C7.**—Yukon River, Middle Mouth, fall chum salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/16-17, 19, 25, 27-29 Quartile 1	98	Males	0	0.0	7	7.1	21	21.4	0	0.0	0	0.0	28	28.6
		Females	0	0.0	13	13.3	57	58.2	0	0.0	0	0.0	70	71.4
		Subtotal	0	0.0	20	20.4	78	79.6	0	0.0	0	0.0	98	100.0
7/30-8/6 Quartile 2	116	Males	0	0.0	10	8.6	26	22.4	0	0.0	0	0.0	36	31.0
		Females	1	0.9	22	19.0	57	49.1	0	0.0	0	0.0	80	69.0
		Subtotal	1	0.9	32	27.6	83	71.6	0	0.0	0	0.0	116	100.0
8/7, 12-13 Quartile 3	13	Males	0	0.0	2	15.4	3	23.1	0	0.0	0	0.0	5	38.5
		Females	0	0.0	3	23.1	5	38.5	0	0.0	0	0.0	8	61.5
		Subtotal	0	0.0	5	38.5	8	61.5	0	0.0	0	0.0	13	100.0
8/19, 23, 26 Quartile 4	6	Males	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0	1	16.7
		Females	0	0.0	2	33.3	3	50.0	0	0.0	0	0.0	5	83.3
		Subtotal	0	0.0	2	33.3	4	66.7	0	0.0	0	0.0	6	100.0
Season Total	233	Males	0	0.0	19	8.2	51	21.9	0	0.0	0	0.0	70	30.0
		Females	1	0.4	40	17.2	122	52.4	0	0.0	0	0.0	163	70.0
		Total	1	0.4	59	25.3	173	74.2	0	0.0	0	0.0	233	100.0
Mean Length Std. Error	Males		-		591		611		-		-			
			-		7		4		-		-			
Mean Length Std. Error	Females		560		591		599		-		-			
			-		8		2		-		-			

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 6.0-inch mesh drift gillnet catch totals.

**Appendix C8.**—Yukon River, Big Eddy and Middle Mouth combined, fall chum salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>			Sample Size			Brood Year (Age)										Total	
						2003		2002		2001		2000		1999			
						(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
7/16-19, 21-25, 27-29 Quartile 1	190	Males	0	0.0	22	11.6	53	27.9	0	0.0	0	0.0	75	39.5			
		Females	1	0.5	25	13.2	89	46.8	0	0.0	0	0.0	115	60.5			
		Subtotal	1	0.5	47	24.7	142	74.7	0	0.0	0	0.0	190	100.0			
7/30-8/6 Quartile 2	143	Males	0	0.0	14	9.8	31	21.7	0	0.0	0	0.0	45	31.5			
		Females	1	0.7	27	18.9	70	49.0	0	0.0	0	0.0	98	68.5			
		Subtotal	1	0.7	41	28.7	101	70.6	0	0.0	0	0.0	143	100.0			
8/7-9, 11-13, 15 Quartile 3	82	Males	2	2.4	8	9.8	9	11.0	0	0.0	0	0.0	19	23.2			
		Females	2	2.4	30	36.6	31	37.8	0	0.0	0	0.0	63	76.8			
		Subtotal	4	4.9	38	46.3	40	48.8	0	0.0	0	0.0	82	100.0			
8/16-21, 23-24, 26-28 Quartile 4	168	Males	4	2.4	28	16.7	23	13.7	0	0.0	0	0.0	55	32.7			
		Females	6	3.6	61	36.3	46	27.4	0	0.0	0	0.0	113	67.3			
		Subtotal	10	6.0	89	53.0	69	41.1	0	0.0	0	0.0	168	100.0			
Season Total	583	Males	6	1.0	72	12.3	116	19.9	0	0.0	0	0.0	194	33.3			
		Females	10	1.7	143	24.5	236	40.5	0	0.0	0	0.0	389	66.7			
		Total	16	2.7	215	36.9	352	60.4	0	0.0	0	0.0	583	100.0			
Mean Length Std. Error	Males	527		579		605		-		-							
		11		3		3		-		-							
Mean Length Std. Error	Females	543		574		588		-		-							
		7		3		2		-		-							

<sup>a</sup> Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 6.0-inch mesh drift gillnet catch totals.

**Appendix C9.**—Yukon River, Mountain Village, fall chum salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

		Brood Year (Age)												
Sample Dates <sup>a</sup>	Sample Size		2003 (0.2)		2002 (0.3)		2001 (0.4)		2000 (0.5)		1999 (0.6)		Total	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/17-29 Quartile 1	167	Males	0	0.0	14	8.4	68	40.7	0	0.0	0	0.0	82	49.1
		Females	1	0.6	18	10.8	66	39.5	0	0.0	0	0.0	85	50.9
		Subtotal	1	0.6	32	19.2	134	80.2	0	0.0	0	0.0	167	100.0
7/30-8/8 Quartile 2	142	Males	0	0.0	23	16.2	39	27.5	0	0.0	0	0.0	62	43.7
		Females	0	0.0	25	17.6	55	38.7	0	0.0	0	0.0	80	56.3
		Subtotal	0	0.0	48	33.8	94	66.2	0	0.0	0	0.0	142	100.0
8/9-21 Quartile 3	158	Males	5	3.2	29	18.3	33	20.9	1	0.6	0	0.0	68	43.0
		Females	1	0.6	30	19.1	59	37.3	0	0.0	0	0.0	90	57.0
		Subtotal	6	3.8	59	37.4	92	58.2	1	0.6	0	0.0	158	100.0
8/22-9/6, 8-10 Quartile 4	149	Males	1	0.7	29	19.4	24	16.1	0	0.0	0	0.0	54	36.2
		Females	2	1.3	49	32.9	44	29.6	0	0.0	0	0.0	95	63.8
		Total	3	2.0	78	52.3	68	45.7	0	0.0	0	0.0	149	100.0
Season Total	616	Males	6	1.0	95	15.4	164	26.6	1	0.2	0	0.0	266	43.2
		Females	4	0.6	122	19.8	224	36.4	0	0.0	0	0.0	350	56.8
		Total	10	1.6	217	35.2	388	63.0	1	0.2	0	0.0	616	100.0
Mean Length Std. Error		Males	558		584		604		600		-			
			15		3		2		-		-			
Mean Length Std. Error		Females	564		578		588		-		-			
			20		2		2		-		-			

*Note:* Samples were collected by Ascarsarmiut Traditional Council technicians.

<sup>a</sup> Sample dates were stratified by quartiles based on Mountain Village 5 7/8-inch mesh drift gillnet catch totals.

**Appendix C10.**—Yukon River, Kaltag, fall chum salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup> Sample Size			Brood Year (Age)										Total No. %	
			2003 (0.2)		2002 (0.3)		2001 (0.4)		2000 (0.5)		1999 (0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%		
7/25-8/9 Quartile 1	120	Males	0	0.0	14	11.7	55	45.8	0	0.0	0	0.0	69	57.5
		Females	0	0.0	9	7.5	42	35.0	0	0.0	0	0.0	51	42.5
		Subtotal	0	0.0	23	19.2	97	80.8	0	0.0	0	0.0	120	100.0
8/10-24 Quartile 2	137	Males	1	0.7	26	19.0	61	44.5	0	0.0	0	0.0	88	64.2
		Females	0	0.0	9	6.5	40	29.3	0	0.0	0	0.0	49	35.8
		Subtotal	1	0.7	35	25.5	101	73.8	0	0.0	0	0.0	137	100.0
8/25-9/1 Quartile 3	156	Males	0	0.0	18	11.5	61	39.1	0	0.0	0	0.0	79	50.6
		Females	0	0.0	21	13.5	56	35.9	0	0.0	0	0.0	77	49.4
		Subtotal	0	0.0	39	25.0	117	75.0	0	0.0	0	0.0	156	100.0
9/2-17 Quartile 4	135	Males	1	0.8	24	17.8	52	38.5	0	0.0	0	0.0	77	57.1
		Females	3	2.2	23	17.0	32	23.7	0	0.0	0	0.0	58	42.9
		Total	4	3.0	47	34.8	84	62.2	0	0.0	0	0.0	135	100.0
Season Total	548	Males	2	0.4	82	15.0	229	41.8	0	0.0	0	0.0	313	57.2
		Females	3	0.5	62	11.3	170	31.0	0	0.0	0	0.0	235	42.8
		Total	5	0.9	144	26.3	399	72.8	0	0.0	0	0.0	548	100.0
Mean Length Std. Error	Males	580		604		609		-		-				
		-		3		2		-		-				
Mean Length Std. Error	Females	567		586		599		-		-				
		9		3		2		-		-				

*Note:* Samples were collected by City of Kaltag technicians.

<sup>a</sup> Sample dates were stratified by quartiles based on Kaltag 5 7/8-inch mesh drift gillnet catch totals.

**Appendix C11.**–Yukon River, Eagle Sonar, summer chum salmon variable mesh drift gillnet test fishery project age and sex composition and mean length, 2006.

		Brood Year (Age)													
Sample Dates <sup>a</sup>	Sample Size		2003 (0.2)		2002 (0.3)		2001 (0.4)		2000 (0.5)		1999 (0.6)		Total		
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
8/27 - 9/21 Mesh Size 2.75-inch	16	Males	0	0.0	4	25.0	9	56.3	0	0.0	0	0.0	13	81.3	
		Females	0	0.0	0	0.0	3	18.8	0	0.0	0	0.0	3	18.8	
		Subtotal	0	0.0	4	25.0	12	75.0	0	0.0	0	0.0	16	100.0	
Mean Length		Males	-		633		596		-		-				
Std. Error			-		13		13		-		-				
Mean Length		Females	-		-		595		-		-				
Std. Error			-		-		13		-		-				
7/22 - 9/29 Mesh Size 4.0-inch	39	Males	0	0.0	9	23.1	22	56.4	0	0.0	0	0.0	31	79.5	
		Females	0	0.0	3	7.7	5	12.8	0	0.0	0	0.0	8	20.5	
		Subtotal	0	0.0	12	30.8	27	69.2	0	0.0	0	0.0	39	100.0	
Mean Length		Males	-		591		597		-		-				
Std. Error			-		11		6		-		-				
Mean Length		Females	-		542		590		-		-				
Std. Error			-		7		12		-		-				
8/18 - 10/1 Mesh Size 5.25-inch	83	Males	1	1.2	18	21.7	23	27.7	0	0.0	0	0.0	42	50.6	
		Females	0	0.0	12	14.5	29	34.9	0	0.0	0	0.0	41	49.4	
		Subtotal	1	1.2	30	36.1	52	62.7	0	0.0	0	0.0	83	100.0	
Mean Length		Males	585		592		620		-		-				
Std. Error			-		9		8		-		-				
Mean Length		Females	-		572		588		-		-				
Std. Error			-		10		7		-		-				
8/6 - 9/30 Mesh Size 7.50-inch	18	Males	0	0.0	6	33.3	9	50.0	1	5.6	0	0.0	16	88.9	
		Females	0	0.0	0	0.0	2	11.1	0	0.0	0	0.0	2	11.1	
		Subtotal	0	0.0	6	33.3	11	61.1	1	5.6	0	0.0	18	100.0	
Mean Length		Males	-		605		639		700		-				
Std. Error			-		17		16		-		-				
Mean Length		Females	-		-		590		-		-				
Std. Error			-		-		15		-		-				
Season Total <sup>a</sup> Combined Mesh	156	Males	1	0.6	37	23.7	63	40.4	1	0.6	0	0.0	102	65.4	
		Females	0	0.0	15	9.6	39	25.0	0	0.0	0	0.0	54	34.6	
		Subtotal	1	0.6	52	33.3	102	65.4	1	0.6	0	0.0	156	100.0	
Mean Length		Males	585		598		611		700		-				
Std. Error			-		6		5		-		-				
Mean Length		Females	-		566		589		-		-				
Std. Error			-		8		5		-		-				

<sup>a</sup> The season total percentages by age group were based on sample size and does not indicate the age composition of the run passage by Eagle sonar.

**Appendix C12.**–Yukon River, Eagle Sonar, summer chum salmon 5.75-inch set gillnet test fishery project age and sex composition and mean length, 2006.

Sample Dates <sup>a</sup>		Sample Size		Brood Year (Age)										Total	
				2003		2002		2001		2000		1999			
				(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		No.	%
				No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/27 - 8/31	40	Males	0	0.0	11	8.0	21	58.6	0	0.0	0	0.0	32	66.6	
		Females	0	0.0	3	4.6	5	28.8	0	0.0	0	0.0	8	33.4	
		Season Total	0	0.0	14	12.6	26	87.4	0	0.0	0	0.0	40	100.0	
Mean Length			Males	-		576		596		-		-			
Std. Error				-		11		9		-		-			
Mean Length			Females	-		598		606		-		-			
Std. Error				-		21		9		-		-			

<sup>a</sup> The season total percentages by age group were based on sample size and does not indicate the age composition of the run passage by Eagle sonar.



**Appendix C13.**—Yukon River, Canada, Sheep Rock and White Rock, fall chum salmon fish wheel test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates <sup>a</sup>	Sample Size		Brood Year (Age)										Total	
			2003		2002		2001		2000		1999			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/27, 29-31, 8/2-24 Quartile 1	233	Males	0	0.0	36	15.5	69	29.6	0	0.0	0	0.0	105	45.1
		Females	3	1.3	36	15.5	89	38.2	0	0.0	0	0.0	128	54.9
		Subtotal	3	1.3	72	30.9	158	67.8	0	0.0	0	0.0	233	100.0
8/25-30 Quartile 2	267	Males	1	0.4	40	15.0	72	27.0	0	0.0	0	0.0	113	42.3
		Females	1	0.4	44	16.5	107	40.1	2	0.7	0	0.0	154	57.7
		Subtotal	2	0.7	84	31.5	179	67.0	2	0.7	0	0.0	267	100.0
8/31-9/3 Quartile 3	214	Males	1	0.5	38	17.8	61	28.5	1	0.5	0	0.0	101	47.2
		Females	1	0.5	33	15.4	79	36.9	0	0.0	0	0.0	113	52.8
		Subtotal	2	0.9	71	33.2	140	65.4	1	0.5	0	0.0	214	100.0
9/4-16, 18-24 27-28, 30, 10/1, 3 Quartile 4	228	Males	1	0.4	45	19.7	57	25.0	2	0.9	0	0.0	105	46.1
		Females	4	1.8	53	23.2	66	28.9	0	0.0	0	0.0	123	53.9
		Subtotal	5	2.2	98	43.0	123	53.9	2	0.9	0	0.0	228	100.0
Season Total	942	Males	3	0.3	159	16.9	259	27.5	3	0.3	0	0.0	424	45.0
		Females	9	1.0	166	17.6	341	36.2	2	0.2	0	0.0	518	55.0
		Total	12	1.3	325	34.5	600	63.7	5	0.5	0	0.0	942	100.0
Mean Length <sup>b</sup> Std. Error	Males		637		645		662		650		-			
			9		3		2		32		-			
Mean Length Std. Error	Females		576		599		619		645		-			
			8		2		2		15		-			

*Note:* Samples were collected by the Canadian Department of Fisheries and Oceans (DFO).

<sup>a</sup> Sample dates were stratified by quartiles based on number sampled.

<sup>b</sup> Length type measured was tip-of-snout to fork-of-tail.

**Appendix C14.**—Delta River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.

		Brood Year (Age) <sup>a</sup>												
Sample Dates	Sample Size		2003		2002		2001		2000		1999		Total	
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
10/26, 11/16, 30	179	Males	7	3.9	40	22.3	35	19.6	1	0.6	0	0.0	83	46.4
12/8		Females	12	6.7	45	25.1	37	20.7	2	1.1	0	0.0	96	53.6
Total		Subtotal	19	10.6	85	47.5	72	40.2	3	1.7	0	0.0	179	100.0
Mean Length		Males	561		577		597		565		-			
Std. Error			11		5		5		-		-			
Mean Length		Females	531		535		562		578		-			
Std. Error			9		5		6		28		-			

<sup>a</sup> Ages were obtained using vertebrae.

**Appendix C15.**—Sheenjek River beach seine, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.

			Brood Year (Age) <sup>a</sup>											
Sample Dates	Sample Size		2003		2002		2001		2000		1999		Total	
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
8/20, 9/1-3, 5-6, 8, 11-12, 14-18, 20	179	Males	0	0.0	16	8.9	63	35.2	2	1.1	0	0.0	81	45.3
		Females	2	1.1	25	14.0	68	38.0	3	1.7	0	0.0	98	54.7
Total		Subtotal	2	1.1	41	22.9	131	73.2	5	2.8	0	0.0	179	100.0
Mean Length		Males	-		622		622		630		-			
Std. Error			-		12		4		20		-			
Mean Length		Females	570		571		601		610		-			
Std. Error			5		5		3		13		-			

<sup>a</sup> Ages were obtained using vertebrae.

**Appendix C16.**—Toklat River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age) <sup>a</sup>								Total	
			2003		2002		2001		2000		1999	
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)	
			No.	%	No.	%	No.	%	No.	%	No.	%
11/2	53	Males	0	0.0	6	11.3	6	11.3	1	1.9	0	0.0
Total		Females	0	0.0	24	45.3	11	20.8	5	9.4	0	0.0
		Subtotal	0	0.0	30	56.6	17	32.1	6	11.3	0	0.0
Mean Length		Males	-		561		586		560		-	
Std. Error			-		11		20		-		-	
Mean Length		Females	-		551		546		550		-	
Std. Error			-		8		12		-		-	

<sup>a</sup> Ages were obtained using vertebrae.

**Appendix C17.**—Chandalar River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age) <sup>a</sup>								Total	
			2003		2002		2001		2000		1999	
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)	
			No.	%	No.	%	No.	%	No.	%	No.	%
9/9-11, 22, 24	179	Males	4	2.2	20	11.2	60	33.5	10	5.6	0	0.0
Total		Females	3	1.7	25	14.0	51	28.5	6	3.4	0	0.0
		Subtotal	7	3.9	45	25.1	111	62.0	16	8.9	0	0.0
Mean Length		Males	548		585		581		577		-	
Std. Error			18		8		5		11		-	
Mean Length		Females	540		546		555		568		-	
Std. Error			10		7		6		13		-	

Note: Samples were collected by the US Fish and Wildlife Service (USFWS).

<sup>a</sup> Ages were obtained using vertebrae.

**Appendix C18.**—Salcha River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2006.

		Brood Year (Age) <sup>a</sup>												
Sample Dates	Sample Size		2003		2002		2001		2000		1999		Total	
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
8/25, 9/1, 4, 11 Total	158	Males	1	0.6	31	19.6	31	19.6	9	5.7	0	0.0	72	45.6
		Females	2	1.3	16	10.1	65	41.1	3	1.9	0	0.0	86	54.4
		Subtotal	3	1.9	47	29.7	96	60.8	12	7.6	0	0.0	158	100.0
Mean Length		Males	620		604		586		586		-			
Std. Error			-		9		5		10		-			
Mean Length		Females	505		540		548		530		-			
Std. Error			15		10		3		26		-			

Note: Samples were collected by Bering Sea Fishermen's Association (BSFA).

<sup>a</sup> Ages were obtained using vertebrae.

## **APPENDIX D: COHO SALMON TABLES**

**Appendix D1.**–Yukon River, District 1, coho salmon commercial gillnet harvest age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)						Total	
			2003		2002		2001			
			(1.1)		(2.1)		(3.1)			
			No.	%	No.	%	No.	%	No.	%
7/30 Period 1	115	Males	156	16.5	403	42.6	33	3.5	592	62.6
		Females	41	4.3	288	30.4	25	2.6	354	37.4
		Subtotal	197	20.9	691	73.0	58	6.1	946	100.0
8/1 Period 2 <sup>a</sup>	0	Males	113	13.5	374	44.4	23	2.7	510	60.5
		Females	72	8.5	246	29.1	15	1.8	333	39.5
		Subtotal	185	22.0	620	73.5	38	4.5	843	100.0
8/3 Period 3	108	Males	42	10.2	190	46.3	8	1.9	239	58.3
		Females	53	13.0	114	27.8	4	0.9	171	41.7
		Subtotal	95	23.1	304	74.1	11	2.8	410	100.0
8/7 Period 4	111	Males	201	11.7	774	45.0	46	2.7	1,022	59.5
		Females	46	2.7	619	36.0	31	1.8	697	40.5
		Subtotal	248	14.4	1,394	81.1	77	4.5	1,719	100.0
8/9 Period 5 <sup>b</sup>	0	Males	84	7.1	474	40.0	26	2.2	585	49.3
		Females	142	12.0	442	37.3	16	1.3	600	50.7
		Subtotal	226	19.1	916	77.3	42	3.6	1,185	100.0
8/10 Period 6	114	Males	97	12.3	264	33.3	14	1.8	375	47.4
		Females	90	11.4	320	40.4	7	0.9	417	52.6
		Subtotal	188	23.7	584	73.7	21	2.6	792	100.0
8/13 Period 7	108	Males	366	6.5	2,511	44.4	0	0.0	2,877	50.9
		Females	105	1.9	2,563	45.4	105	1.9	2,773	49.1
		Subtotal	471	8.3	5,075	89.8	105	1.9	5,650	100.0
8/15 Period 8 <sup>c</sup>	0	Males	257	4.2	2,771	45.5	57	0.9	3,085	50.7
		Females	543	8.9	2,343	38.5	114	1.9	3,000	49.3
		Subtotal	800	13.1	5,114	84.0	171	2.8	6,085	100.0
8/17 Period 9	105	Males	205	6.7	1,377	44.8	29	1.0	1,612	52.4
		Females	352	11.4	1,026	33.3	88	2.9	1,465	47.6
		Subtotal	557	18.1	2,403	78.1	117	3.8	3,077	100.0
8/20 Period 10	108	Males	385	7.4	2,023	38.9	144	2.8	2,552	49.1
		Females	433	8.3	2,215	42.6	0	0.0	2,649	50.9
		Subtotal	819	15.7	4,238	81.5	144	2.8	5,201	100.0
8/22 Period 11 <sup>d</sup>	0	Males	100	5.5	727	39.9	67	3.7	894	49.1
		Females	184	10.1	710	39.0	33	1.8	928	50.9
		Subtotal	284	15.6	1,438	78.9	100	5.5	1,822	100.0
8/24 Period 12	111	Males	272	9.0	1,168	38.7	81	2.7	1,521	50.5
		Females	326	10.8	1,140	37.8	27	0.9	1,493	49.5
		Subtotal	597	19.8	2,308	76.6	109	3.6	3,014	100.0
8/27 Period 13	112	Males	376	10.7	1,442	41.1	31	0.9	1,850	52.7
		Females	157	4.5	1,411	40.2	94	2.7	1,661	47.3
		Subtotal	533	15.2	2,853	81.3	125	3.6	3,511	100.0

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**Appendix D1.**—Page 2 of 2.

			Brood Year (Age)							
Sample Dates	Sample Size		2003		2002		2001		Total	
			(1.1)		(2.1)		(3.1)			
			No.	%	No.	%	No.	%	No.	%
8/29, 31, 9/3, 5 Periods 14-17 <sup>c</sup>	0	Males	543	10.7	2,082	41.1	45	0.9	2,670	52.7
		Females	226	4.5	2,036	40.2	136	2.7	2,398	47.3
		Subtotal	769	15.2	4,118	81.3	181	3.6	5,068	100.0
Season All Periods	992	Males	3,199	8.1	16,580	42.2	606	1.5	20,385	51.8
		Females	2,770	7.0	15,474	39.4	695	1.8	18,938	48.2
		Subtotal	5,969	15.2	32,053	81.5	1,300	3.3	39,323	100.0
Mean Length		Males	550		554		558			
Std. Error			3		1		10			
Mean Length		Females	544		549		545			
Std. Error			4		2		8			

*Note:* All District 1 fall chum commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets.

<sup>a</sup> Age and sex composition was estimated by averaging periods 1 and 3.

<sup>b</sup> Age and sex composition was estimated by averaging periods 4 and 6.

<sup>c</sup> Age and sex composition was estimated by averaging periods 7 and 9.

<sup>d</sup> Age and sex composition was estimated by averaging periods 10 and 12.

<sup>e</sup> Age and sex composition was estimated from period 13.

**Appendix D2.**—Yukon River, Big Eddy, coho salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)						Total	
			2003		2002		2001			
			(1.1)		(2.1)		(3.1)			
			No.	%	No.	%	No.	%	No.	%
7/27-30, 8/2, 5, 7, 10	93	Males	11	11.8	31	33.3	5	5.4	47	50.5
12-21, 23-24, 26, 28		Females	5	5.4	41	44.1	0	0.0	46	49.5
Season Total		Total	16	17.2	72	77.4	5	5.4	93	100.0
Mean Length		Males	537		541		522			
Std. Error			12		6		6			
Mean Length		Females	555		550		-			
Std. Error			13		5		-			

**Appendix D3.**—Yukon River, Middle Mouth, coho salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)						Total	
			2003		2002		2001			
			(1.1)		(2.1)		(3.1)			
			No.	%	No.	%	No.	%	No.	%
7/26-27, 29-8/1, 3, 7, 9	36	Males	3	8.3	18	50.0	1	2.8	22	61.1
12, 14-15, 19, 24, 26		Females	1	2.8	12	33.3	1	2.8	14	38.9
Season Total		Total	4	11.1	30	83.3	2	5.6	36	100.0
Mean Length		Males	587		555		520			
Std. Error			12		6		-			
Mean Length		Females	550		568		575			
Std. Error			-		7		-			



**Appendix D4.**—Yukon River, Big Eddy and Middle Mouth combined, coho salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

		Brood Year (Age)								
Sample Dates	Sample Size		2003		2002		2001		Total	
			(1.1)		(2.1)		(3.1)		No.	%
			No.	%	No.	%	No.	%	No.	%
7/26-8/3, 5, 7, 9-10	129	Males	14	10.9	49	38.0	6	4.7	69	53.5
12-21, 23-24, 26, 28		Females	6	4.7	53	41.1	1	0.8	60	46.5
Season Total		Total	20	15.5	102	79.1	7	5.4	129	100.0
Mean Length		Males	548		546		522			
Std. Error			11		4		5			
Mean Length		Females	554		554		575			
Std. Error			11		4		-			

**Appendix D5.**—Yukon River, Mountain Village, coho salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)						Total	
			2003		2002		2001			
			(1.1)		(2.1)		(3.1)			
			No.	%	No.	%	No.	%	No.	%
7/31-8/9, 10-13, 15-24	94	Males	6	6.4	49	52.1	2	2.1	57	60.6
		Females	3	3.2	33	35.1	1	1.1	37	39.4
		Subtotal	9	9.6	82	87.2	3	3.2	94	100.0
8/25-9/6, 8-11	67	Males	1	1.5	32	47.7	1	1.5	34	50.7
		Females	1	1.5	31	46.3	1	1.5	33	49.3
		Subtotal	2	3.0	63	94.0	2	3.0	67	100.0
Season Total	161	Males	7	4.3	81	50.3	3	1.9	91	56.5
		Females	4	2.5	64	39.8	2	1.2	70	43.5
		Total	11	6.8	145	90.1	5	3.1	161	100.0
Mean Length		Males	546		546		560			
Std. Error			16		4		10			
Mean Length		Females	555		556		595			
Std. Error			9		4		-			

*Note:* Samples were collected by Ascarsarmiut Traditional Council technicians.

**Appendix D6.**—Yukon River, Kaltag, coho salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)						Total	
			2003		2002		2001			
			(1.1)		(2.1)		(3.1)			
			No.	%	No.	%	No.	%	No.	%
8/6-9/17	27	Males	6	22.2	16	59.3	0	0.0	22	81.5
		Females	0	0.0	4	14.8	1	3.7	5	18.5
		Season Total	6	22.2	20	74.1	1	3.7	27	100.0
Mean Length		Males	554		566		-			
Std. Error			15		8		-			
Mean Length		Females	-		538		570			
Std. Error			-		10		-			

*Note:* Samples were collected by City of Kaltag technicians.

**Appendix D7.**—Otter Creek (Nenana River), coho salmon escapement project age and sex composition and mean length (mm), 2006.

Sample Dates	Sample Size		Brood Year (Age)						Total	
			2003		2002		2001			
			(1.1)		(2.1)		(3.1)			
			No.	%	No.	%	No.	%	No.	%
9/23	51	Males	4	7.8	19	37.3	3	5.9	26	51.0
		Females	3	5.9	20	39.2	2	3.9	25	49.0
		Season Total	7	13.7	39	76.5	5	9.8	51	100.0
Mean Length		Males	525		518		503			
Std. Error			28		11		29			
Mean Length		Females	527		540		525			
Std. Error			30		5		25			

*Note:* Samples were collected by Bering Sea Fishermen's Association. Fish were collected with rod/reel.